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**SWMU 2-87.65 MACHINE PIT, SWMU 77 PCB
RETENTION TANK, SWMU 78.B OIL/WATER
SEPARATOR, AND OA 16 FORMER HAZARDOUS
WASTE STORAGE FACILITY**

INTERIM MEASURES WORK PLAN

Boeing—Plant 2
Seattle/Tukwila, Washington

Submitted To:
The Boeing Company
Energy and Environmental Affairs
Seattle, Washington

October 1998

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**SWMU 2-87.65 MACHINE PIT,
SWMU 77 PCB RETENTION TANK,
SWMU 78.B OIL/WATER SEPARATOR, AND OA 16
FORMER HAZARDOUS WASTE STORAGE
FACILITY
INTERIM MEASURES WORK PLAN**

**BOEING—PLANT 2
SEATTLE/TUKWILA, WASHINGTON**

Prepared for
The Boeing Company
Energy and Environmental Affairs

October 1998

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**SWMU 2-87.65 MACHINE PIT,
SWMU 77 PCB RETENTION TANK,
SWMU 78.B OIL/WATER SEPARATOR,
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INTERIM MEASURES WORK PLAN**

**BOEING—PLANT 2
SEATTLE, WASHINGTON**

1. INTRODUCTION

This plan describes the proposed scope of work to accomplish interim measures (IMs) at the SWMU 2-87.65 (Machine Pit), SWMU 77 (PCB Retention Tank), SWMU 78.B (Oil/Water Separator), and OA 16 (Former Hazardous Waste Storage Facility) located at Boeing Plant 2. This work is being done prior to completion of the Corrective Measures Study (CMS) in order to support redevelopment of the area where Building 2-87 now sits.

This scope of work focuses on soil cleanup only to support building construction in the area where the solid waste management units (SWMUs) and other area (OA) exist. Groundwater remediation is not addressed in this IM work plan. Groundwater remediation, if required, will be addressed during completion of the CMS.

This Interim Measures Work Plan has been prepared to comply with the requirements of the Administrative Order on Consent (Order) issued by the U.S. Environmental Protection Agency (EPA) to The Boeing Company (Boeing) under the authority of Section 3008(h) of the Resource Conservation and Recovery Act of 1976 (RCRA), as amended, 42 USC 6928(h). This Order [RCRA Docket No 1092-01-22-3008(h)] became effective on 18 January 1994.

2. SWMU/AOC/OA DESCRIPTION

The 2-87.65 machine pit was a reinforced concrete trench approximately 3 feet wide by 2.5 feet deep by 26 feet long. The trench has a floor drain and trap in the center. The trench was used to collect oil that dripped from machinery.

SWMU 77 served as secondary containment for PCB-containing transformer oil. The containment was for electrical transformers and consisted of a bermed concrete area. The containment area was connected to an underground storage tank (UST) via piping. The tank and piping have been removed. SWMU 77 is located approximately 50 feet southwest of Cistern 4 (SWMU 79). SWMU 77 consists of 3 areas. Reference to SWMU 77 within this document refers to the area located north of Building 2-110.

SWMU 78.B is an oil/water separator that collects stormwater runoff to remove oil. Oil from the separator is regularly pumped out and shipped off-site for disposal. SWMU 78.B is located on the south side of Building 2-87.

OA 16 is a former RCRA container storage area (Building 2-104 TSD) that has gone through aboveground closure (WESTON 1994). The former container storage area has since been used for covered parking.

Figure 1 shows the location of these SWMUs.

3. BACKGROUND

3.1 Summary of Nature and Extent

Nine locations were sampled near the 2-87.65 machine pit and 78.B oil/water separator for soil constituents of concern. Samples were analyzed for metals, polychlorinated biphenyls (PCBs), volatile organic compounds (VOCs), and oil-range petroleum hydrocarbons. Low concentrations of metals and elevated concentrations of PCBs were found in the immediate vicinity of these SWMUs. A summary of the constituent of concern (CoC) concentrations is shown in Table 1.

Soil samples were collected from three locations around SWMU 77. Soil samples were analyzed for metals, PCBs and total petroleum hydrocarbon (TPH). Low concentrations of metals were detected in the soil samples. No PCBs or TPH was detected. A summary of the CoC concentrations is shown in Table 2.

WESTON conducted near-surface and subsurface soil sampling during closure of the aboveground portion of OA 16 (WESTON 1994). Two samples were collected from near-surface soils immediately beneath the concrete pad of the easternmost storage cell, and two samples were collected from depths of 8 to 10 feet below ground surface (bgs) near the same locations. A total of 13 VOC constituents, 2 SVOC constituents, and 12 metals was detected in one or more of the four samples. Cadmium and copper were detected in both of the near-surface soil samples at elevated concentrations.

Additional soil sampling was conducted at OA 16 based on the exceedances of RFI reference levels for soils reported during the aboveground closure. In total, 9 (plus 1 duplicate) soil samples were collected from three soil borings surrounding the previous soil sampling locations. No metals were detected above RFI reference levels in any of the samples from the later three borings indicating that the extent of releases to soil from OA 16 were very limited in extent. A summary of the CoC concentrations is shown on Table 3.

A detailed description of the soil quality for these four units can be found in WESTON 1998. Appendix A contains a summary of the laboratory analytical information.

3.2 Rationale for Interim Measures

Boeing desires to complete these IMs in order to allow facility redevelopment in the area where these units now exist. Removal of soil as IMs will allow redevelopment with the intent of preventing any future soil removal under the new building to be constructed in the area.

Site conditions and data indicate the soil currently presents no immediate risk to human health or the environment.

4. INTERIM MEASURES OBJECTIVES

The objectives of these IMs are to:

- Allow construction of new structures and remove soil to the extent that no potential future risks to human health or the environment above accepted guidelines is likely given the proposed use of the facility.
- Remove soil to the extent that it will be at least as protective as final remedies selected for similar sites in the CMS.
- Remove impacted soil such no short-term risks occur to workers during construction of the new facility.

5. PROJECT PARTICIPANTS AND RESPONSIBILITIES

Three primary participants are anticipated in the performance of this project, including: (1) The Boeing Company, (2) Roy F. Weston, Inc., and (3) An Interim Measure construction subcontractor. The responsibilities of these participants are as follows:

The Boeing Company

Boeing's responsibilities include project direction and oversight, site security, integration of the interim measures with ongoing facility operations, disposal of hazardous wastes, personnel access badges, space allocation, site usage, and other miscellaneous support items associated with planning and performance of the work.

Roy F. Weston, Inc.

WESTON's responsibilities will be to prepare the work plan, ensure project safety, subcontractor management, and construction oversight. WESTON will also perform confirmatory sampling of the remaining soil upon completion of removal. WESTON will prepare the final interim action completion report.

Interim Measure Construction Subcontractor

The interim action construction subcontractor will be responsible for site preparation, soil excavation, truck/roll-off loading, backfill provisions, worker health and safety monitoring, equipment decontamination, exclusion zones, decontamination stations, tarping truck/roll-offs, spill protection, and general labor. The interim action construction subcontractor will report directly to WESTON's on-site construction manager.

An overall organization chart is shown in Figure 2.

6. SCOPE OF WORK (PLANS AND SPECIFICATIONS)

6.1 Health And Safety Plan (HASP)

An OSHA/WISHA-compliant HASP covering all personnel will be prepared. A HASP will be prepared by the interim measure construction subcontractor. The HASP will address protective equipment, a task-by-task risk analysis, safety procedures, and training.

It is anticipated that the work will be performed in modified Level-D personal protective equipment (PPE). This includes the following equipment:

- Hard hats
- Safety glasses
- Steel-toed boots/leather steel-toed work boots
- Tyvek coveralls
- Work gloves

6.2 Mobilization

An exclusion zone will be set up around each work area. Level-D PPE will be required within the exclusion zone. A small decontamination station will be set up adjacent to the exclusion zone which will include PPE, a decontamination tub, brushes, disposal bin for used PPE, first aid kit and other supplies.

6.3 Soil Removal

Limits of excavation will be marked. Preliminary soil removal limits for SWMU 2-87.65, SWMU 77, SWMU 78.B, and OA 16 are shown in Figures 3, 4, and 5. These limits are based on the estimate of soil exceeding the soil cleanup goals listed in Table 4. These cleanup goals are 100 times MTCA Method B surface water criteria. Cleanup goals for PCBs are to achieve non-detectable concentrations using EPA Method 8082 modified.

Soil will be removed using a small excavator or backhoe. Soil will be excavated until the limits of excavation shown in Figures 3, 4, and 5 are reached consistent with Section 6.4.

SWMU 77 served as secondary containment for PCBs. No PCBs were detected in soil near this SWMU. However, chrome was detected above performance objectives. Since chrome was not handled in this SWMU, the presence of chrome is believed to be from Cistern 4. Therefore, the limits of excavation for SWMU 77 will be based on its physical features. Chrome exceedances to the north of SWMU 77 will be further investigated during interim measure activities planned for Cistern 4.

Soil removal will proceed to a depth no deeper than groundwater. Soil contaminants below the water table will be addressed in the CMS as a groundwater remediation issue.

Soil will be kept moist as necessary to prevent dusting. Excavated soil will be loaded directly into dump trucks and taken to a stockpile area where it will be placed into a stockpile cell. The cell will consist of jersey barriers or equivalent arranged in a rectangular pattern lined with plastic. A separate stockpile cell will be constructed for each of the SWMUs to prevent comingling of contaminants. The soil stockpile cell will be covered at the end of each day to prevent run-on and runoff.

The area of excavation, depth and estimated volume for each of the units is shown in Table 5.

6.4 Confirmatory Soil Sampling

Post-excavation confirmatory sampling will occur after excavation limits have been reached. The purpose is to document conditions prior to backfill and/or direct additional excavation. These samples will be sent to an off-site laboratory for a quick turnaround. Depending on the rate of excavation, some of the confirmatory samples may be collected upon completing excavation of a portion of the area.

Tables 6, 7, and 8 provide a listing of the confirmatory analyses to be performed on the soil samples. The analytes selected for confirmatory analyses are those constituents that exceeded the performance objectives. In the case of SWMU 77, confirmatory analysis analytes will be PCBs only since chrome concentrations will be addressed as part of the Cistern 4 investigation.

IM cleanup goals are listed in Table 4. During excavation, confirmatory samples falling within an order of magnitude of Table 4 cleanup goals will be deemed compliant with the IM cleanup performance objectives. For SWMU 77, excavation to the north and east may be terminated at the limits shown on Figure 4 since impacted soil beyond these boundaries will be addressed as part of Cistern 4.

The sample density and spacing of confirmatory sampling program will depend upon the configuration of the excavated area. Details for confirmatory sampling are shown in Table 9.

Confirmatory sampling is discussed in more detail in Appendix B.

6.5 Decontamination

The hoe bucket and thumb will be the only equipment requiring decontamination. Decontamination will be performed first using dry methods (brush and rags) to remove gross contamination. Subsequent decontamination will be performed using a pressure washer and soap solution. The quantity of decontamination water generated will be kept to a minimum and is expected to be less than 10 gallons per SWMU. Decontamination water will be collected and placed in a temporary storage container. The decontamination water will be collected in a

temporary container and disposed of properly. Decontamination brushes, PPE, and small quantities of other miscellaneous materials will be disposed with the soil.

6.6 Backfill

Backfill will be placed by an excavator or backhoe. Backfill will consist of a granular well compacted fill as specified by Boeing. Compaction requirements will be specified by Boeing.

6.7 Transportation and Disposal (T&D)

The soil stockpiles will be sampled and analyzed prior to disposal. The number of samples from each stockpile will depend upon the quantity of soil generated. Table 10 provides a listing of the number of soil samples based on stockpile size.

Soil will be profiled and disposed in accordance with all applicable regulations. Manifests or bills of lading will be generated for all material disposed. Boeing will be responsible for disposal of all materials.

6.8 Demobilization

Demobilization will occur upon completion of the work. Demobilization will consist of removal of the exclusion zones, decontamination stations, portable equipment and site cleanup. Areas that are visually observed to contain soil from the work will be cleaned as needed.

7. OPERATION AND MAINTENANCE

Because this is a removal action, no long- or short-term operation and maintenance requirements are required.

8. SCHEDULE

A proposed schedule for the work is shown in Figure 6.

9. INTERIM MEASURE CONSTRUCTION QUALITY ASSURANCE

Construction quality assurance requirements will be implemented and verified per the checklist provided in Table 11.

10. REPORTING REQUIREMENTS

Daily reports will be prepared in the field by the on-site construction engineer during each day work is performed. The reports will be prepared throughout the day and be completed for each

day before the construction engineer leaves the site. The reports will be prepared on preprinted forms in ink. The reports will be maintained in a dry secure location. The daily reports will include the following information:

- Construction engineers name
- Date
- Weather (temperature, precipitation, other observations)
- Equipment on-site
- Personnel (contractors, visitors, agency)
- Work start and end time
- Work performed
- Testing/inspections performed
- Problems/issues
- Critical conversations/directions received or given
- Materials brought on-site
- Wastes/debris disposed off-site
- Other pertinent information (sketches, test data, unknown conditions, etc.)

Monthly status reports will be prepared by Boeing for submittal to EPA. Progress updates will be provided to the EPA as requested.

11. REFERENCES

WESTON (Roy F. Weston, Inc.). 1998. Comprehensive RCRA Facility Investigation, Boeing—Plant 2, Seattle/Tukwila, Washington. Prepared for The Boeing Company, Energy and Environmental Affairs, Seattle, WA. Roy F. Weston, Inc., Seattle, WA. August .

WESTON. 1994. Closure Certification Report, TSD Areas 1, 2, and 3, Seattle/Tukwila, Washington. Prepared for The Boeing Company, Seattle, WA.

FIGURES



Boeing Field

Seattle City Limits
Tukwila City Limits

FAA Tower

SWMU 77
SWMU 2-87.65
OA-16
SWMU 78.B

Jorgensen Forge

Marina

East Marginal Way South

16th Avenue South

Duwamish Waterway

2-10

2-15

2-31

2-41

2-40

2-44

2-65

2-63

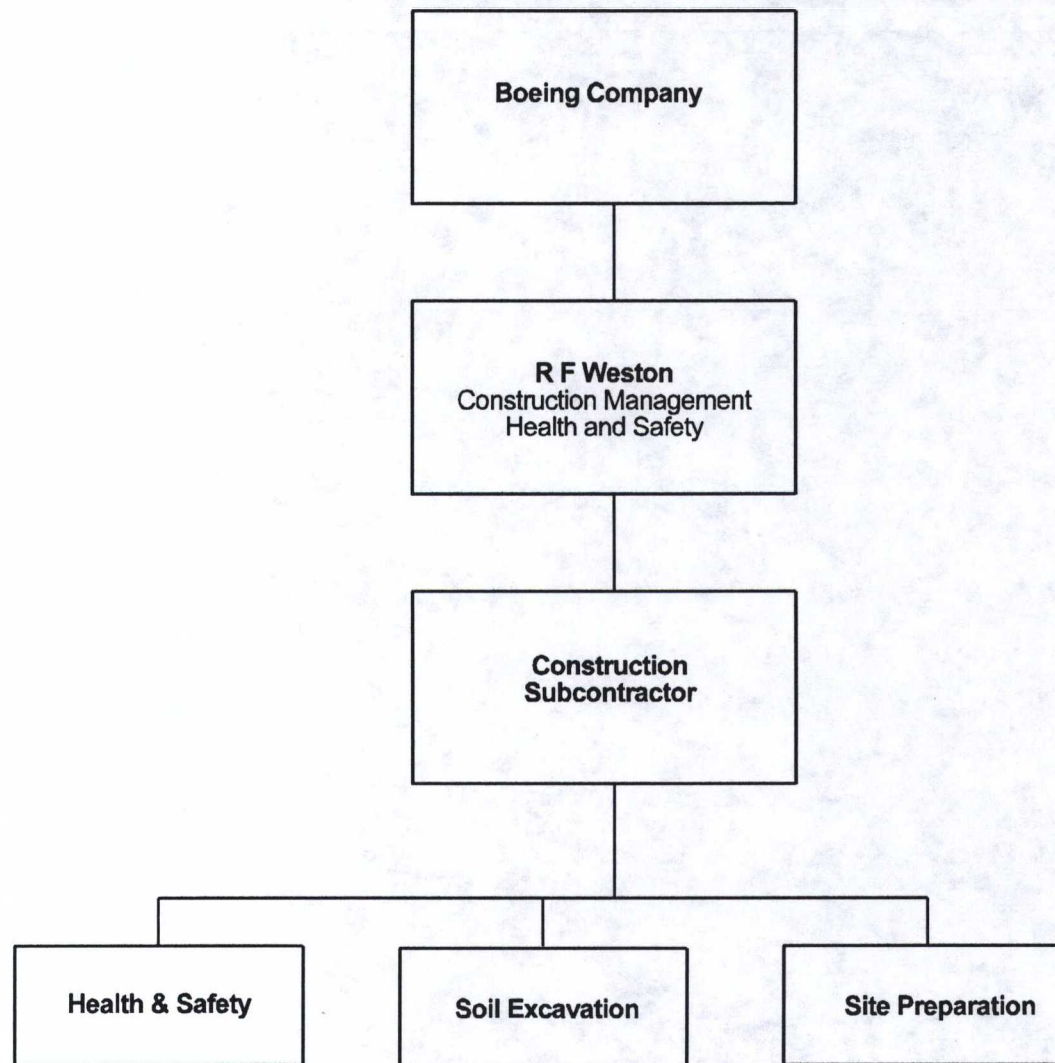
2-62

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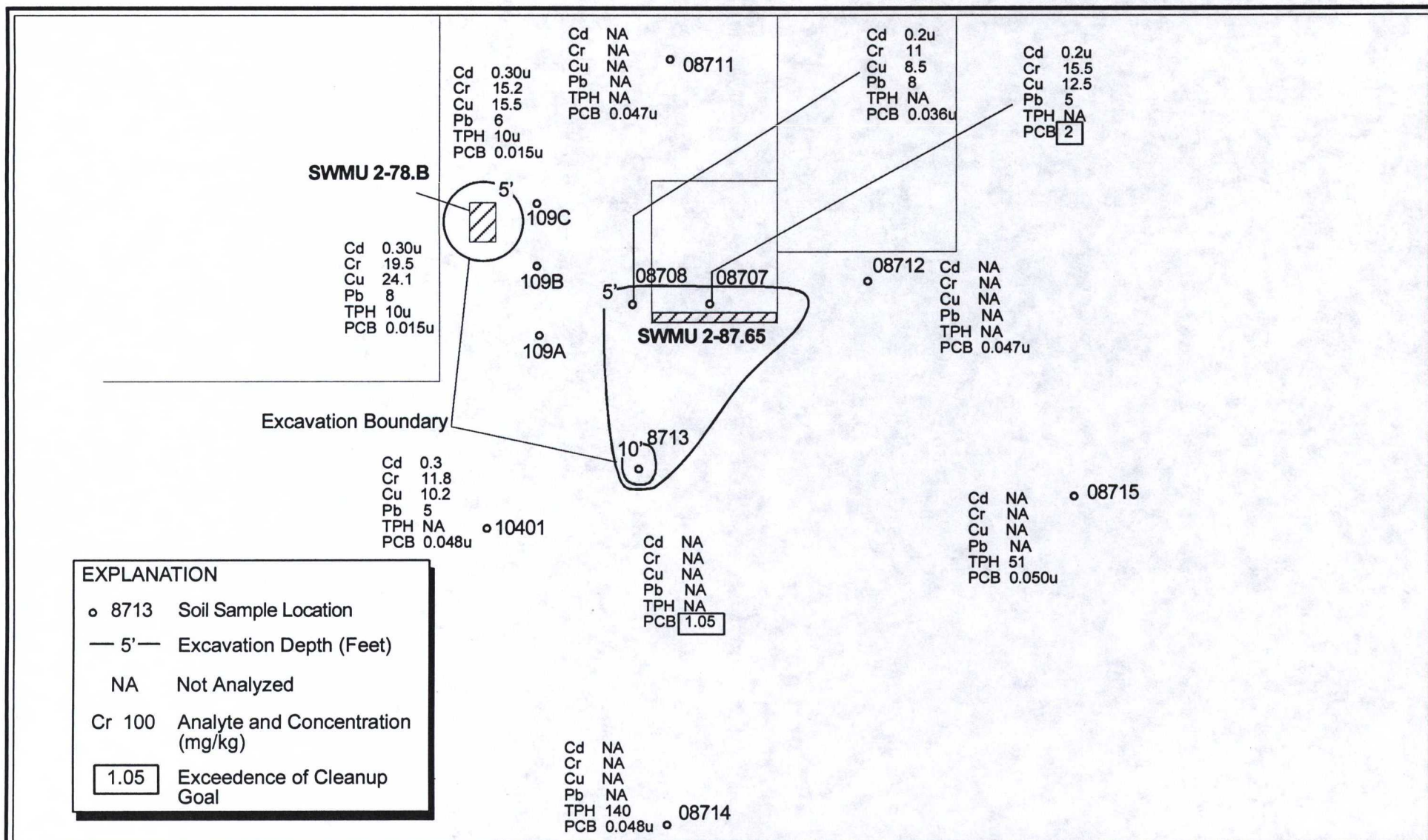
2-87



Organization Chart

FIGURE

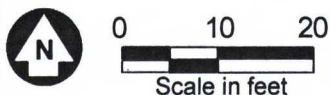
2



**SWMUs 2-87.65 and 78.B
Excavation Plan**

FIGURE

3



EXPLANATION

o11001 Soil Sample Location

—5'— Excavation Depth (Feet)

NA Not Analyzed

PCB 100 Analyze and Concentration (mg/kg)



Exceedence of Cleanup Goal

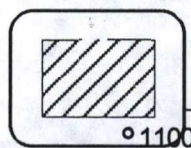
Building
2-87

o 08709
PCB 0.056u

o 08704
PCB 0.086u

08705
o PCB 0.096u

o 08706
PCB 0.087u



Excavation Boundary

o 11001
SWMU 77 PCB 0.090u

o 08713
PCB 0.047u

Building
2-110



0 10 20
Scale in feet

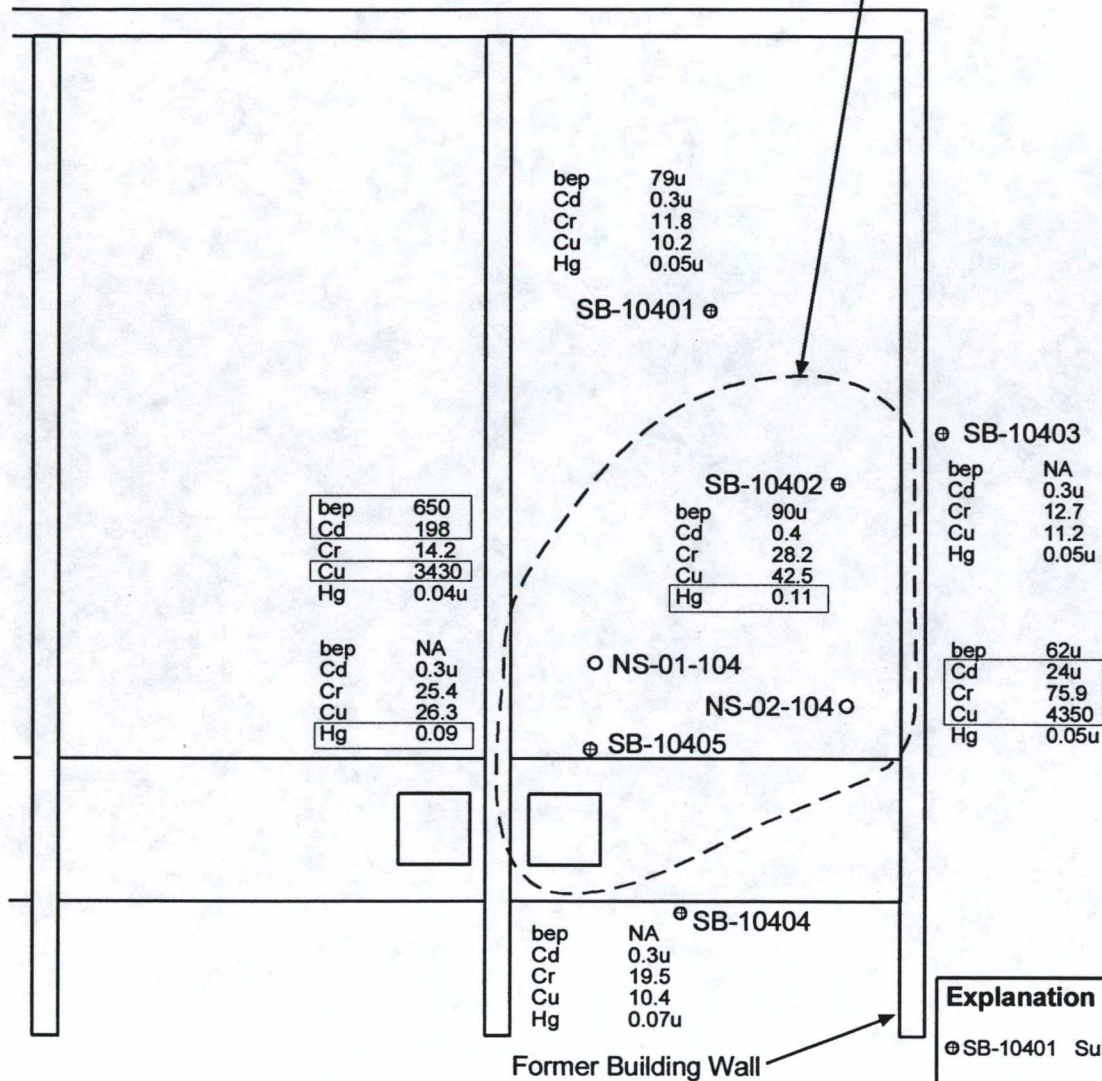
WESTON.
MANAGERS DESIGNERS/CONSULTANTS

**SWMU 77
Excavation Plan**

FIGURE

4

Excavation Boundary



Explanation

⊕ SB-10401 Subsurface Sample Location

ONS-01-104 Near Surface Soil Sample

Cd 62 Analyte and Concentration (mg/kg)

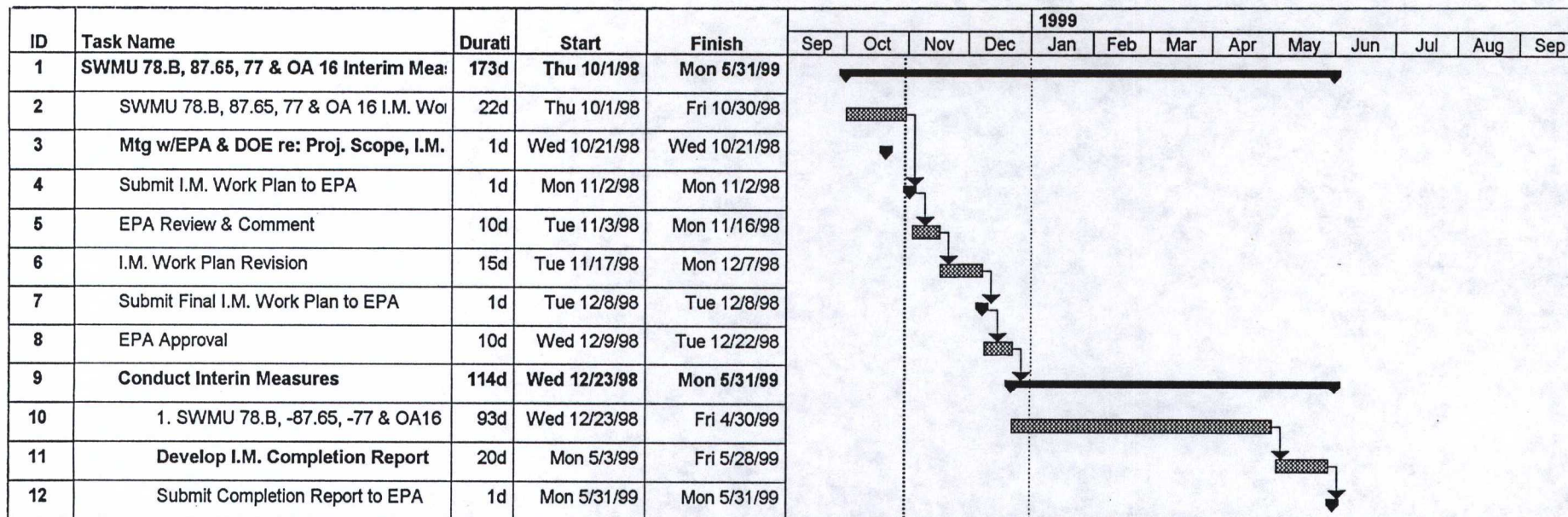
bep bis(2-Ethylhexyl)phthalate

Exceeds Cleanup Goal

OA-16 Excavation Plan



Figure
5



Project:
Date: Fri 10/30/98

Task



Summary



Rolled Up Progress



Progress



Rolled Up Task



Milestone



Rolled Up Milestone



Interim Measures Schedule

FIGURE

6

TABLES

Table 1— SWMU 2-87.65 and 78.B Constituent Concentrations

Constituent	Sample Location	SB08707		SB08708		SB08711		
	Depth (feet)	3	3 Dup.	3	3 Dup.	2	7	10
Inorganics (Total)(mg/kg)								
Arsenic		7U	--	5U	5U	--	--	--
Cadmium		0.20U	--	0.20U	0.20U	--	--	--
Chromium		15.50J	--	11J	11J	--	--	--
Copper		12.5	--	8.4	8.5	--	--	--
Lead		5J	--	7J	8J	--	--	--
Thallium		5U	--	6	5U	--	--	--
PCBs (ug/kg)								
Total PCBs		2,000T	1,900T	36UT	--	37UT	47UT	43UT
Total Petroleum Hydrocarbons (mg/kg)								
Oil Range		50U	--	50U	--	--	--	--
Volatile Organic Compounds (ug/kg)								
cis-1,2-Dichloroethene		1.10U	--	1.2	--	--	--	--
Trichloroethene		23	--	47	--	--	--	--
Vinyl Chloride		2.20U	--	2.10U	--	--	--	--

Notes:

-- = Not analyzed

U = The analyte was not detected at the given quantitation limit

UT = Totalized value of undetected analyte

Table 1— SWMU 2-87.65 and 78.B Constituent Concentrations

Constituent	Sample Location	SB08712			SB08713			SB08714		
	Depth (feet)	2	6.5	10	2	6	10	2	7	10
Inorganics (Total)(mg/kg)										
Arsenic		--	--	--	--	--	--	--	--	--
Cadmium		--	--	--	--	--	--	--	--	--
Chromium		--	--	--	--	--	--	--	--	--
Copper		--	--	--	--	--	--	--	--	--
Lead		--	--	--	--	--	--	--	--	--
Thallium		--	--	--	--	--	--	--	--	--
PCBs (ug/kg)										
Total PCBs		36UT	47UT	46UT	1,050T	47UT	200T	42UT	48UT	43UT
Total Petroleum Hydrocarbons (mg/kg)										
Oil Range		--	--	--	--	--	--	--	--	--
Volatile Organic Compounds (ug/kg)										
cis-1,2-Dichloroethene		--	--	--	--	--	--	--	--	--
Trichloroethene		--	--	--	--	--	--	--	--	--
Vinyl Chloride		--	--	--	--	--	--	--	--	--

Table 1— SWMU 2-87.65 and 78.B Constituent Concentrations

Constituent	Sample Location	SB08715				SB109B			
	Depth (feet)	2	7	9.5	2 Dup.	9	14	45	55
Inorganics (Total)(mg/kg)									
Arsenic		--	--	--	--	4	1.3	1.7	--
Cadmium		--	--	--	--	0.30U	0.30U	0.30U	--
Chromium		--	--	--	--	19.5	12	13.7	--
Copper		--	--	--	--	24.1	10.9	14.2	--
Lead		--	--	--	--	8	3U	3U	--
Thallium		--	--	--	--	0.10U	0.10U	0.10U	--
PCBs (ug/kg)									
Total PCBs		39UT	50UT	44UT	36UT	15UT	15UT	--	--
Total Petroleum Hydrocarbons (mg/kg)									
Oil Range		--	--	--	--	--	--	--	--
Volatile Organic Compounds (ug/kg)									
cis-1,2-Dichloroethene		--	--	--	--	780	170	1.30U	--
Trichloroethene		--	--	--	--	480	260	1.30U	1U
Vinyl Chloride		--	--	--	--	32	8.10U	2.70U	2U

Table 1— SWMU 2-87.65 and 78.B Constituent Concentrations

Constituent	Sample Location	SB109C					
	Depth (feet)	6	9	14	45	56	71.5
Inorganics (Total)(mg/kg)							
Arsenic		3.2	2	1.2	1.7	--	1.8
Cadmium		0.30U	0.30U	0.30U	0.30U	--	0.30U
Chromium		11.8	15.2	12.1	13.1	--	12
Copper		12.2	15.5	9.5	16.5	--	15.9
Lead		6	3U	3U	3U	--	3U
Thallium		0.10U	0.10U	0.10U	0.10U	--	0.10U
PCBs (ug/kg)							
Total PCBs		15UT	15UT	174T	--	--	--
Total Petroleum Hydrocarbons (mg/kg)							
Oil Range		--	--	--	--	--	--
Volatile Organic Compounds (ug/kg)							
cis-1,2-Dichloroethene		1.20U	2.4	6.7	1.40U	--	1.40U
Trichloroethene		58	18	24	1.40U	2.1	1.40U
Vinyl Chloride		2.40U	2.70U	2.50U	2.80U	0.20U	2.90U

Table 2—SWMU 77 Constituent Concentrations

Constituent	Sample Location	SB08705			SB08706			SB11001			
	Depth (feet)	2.5	5	7.5	7.5	10	12.5	1.5	6	9.5	9.5 Dup.
Inorganics (Total)(mg/kg)											
Arsenic		5U	6U	7U	6U	6U	7U	--	--	--	--
Cadmium		0.20U	0.20U	0.30U	0.20U	0.30U	0.30U	--	--	--	--
Chromium		12.1	115	18.8	14.9	14.3	15.8	--	--	--	--
Copper		8.3	19.5	21.6	14.9	11.5	15.8	--	--	--	--
Lead		2	7	5	5	4	6	--	--	--	--
PCBs (ug/kg)											
Total PCBs		73UT	96UT	88UT	84UT	87UT	87UT	70UT	90UT	90UT	--
Total Petroleum Hydrocarbons (mg/kg)											
Oil Range		--	--	--	--	--	--	50 U	50 U	50 U	50 U

Notes:

-- = Not analyzed

U = The analyte was not detected at the given quantitation limit

UT = Totalized value of undetected analyte

Table 3—OA 16 Constituent Concentrations (mg/kg)

Constituent	Sample Location	NS-01-104	NS-02-104	SB-10401	SB-10402	SB-10403			SB-10404			SB-10405		
	Depth (feet)	Surface	Surface	8	10	1.5	6	10.5	1.5	6.5	10.5	1.5	6.5	10.5
Cadmium		198	240	0.4	0.3	0.2U	0.3U	0.3U	0.2U	0.3U	0.3U	0.2U	0.3U	0.3U
Chrome		14.2	75.9	28.2	11.8	10.9	12.7	13.3	19.5	12.9	10.6	12.1	20.5	19.2
Copper		3430	4350	42.5	10.2	8.6	11.2	10.4	7.5	10.4	9.2	9.0	26.3	25.4
Lead		11.0	4.0	19.0	5.0	4.0	4.0	4.0	3.0	5.0	3.0	3.0	14.0	6.0
Mercury		0.04U	0.05U	0.11	0.05U	0.05U	0.05U	0.05U	0.05U	0.06U	0.07U	0.05U	0.09	0.0U
bis(2-Ethylhexyl)phthalate		0.65	0.062U	0.090U	0.079U	--	--	--	--	--	--	--	--	--

Notes:

-- = Not analyzed

U = The analyte was not detected at the given quantitation limit

Table 4—Soil Cleanup Goals

Analyte	Cleanup Criteria (mg/kg)
bis(2-Ethylhexyl)phthalate	0.35
Cadmium	2.0
Chrome	48.1 ^a
Copper	266
Mercury	0.07 ^a
PCB	Non detect
TPH	200

^a Based on background.

Table 5—SWMU Excavation Dimensions

SWMU/AOC	Length (feet)	Width (feet)	Depth (feet)	Volume (cubic yards)
SWMU 2-87.65	30	25	5-10	80
SWMU 77	17	13	5	40
SWMU 78.B	10	8	5	15
OA 16	10	10	10	40

Table 6—SWMUs 2-87.65 and 78.B Confirmatory Sample Analytics

Analyte	Cleanup Goal (mg/kg)
TPH	200
PCB	Non detect

Table 7— SWMU 77 Confirmatory Sample Analytics

Analyte	Cleanup Goal (mg/kg)
PCB	Non detect

Table 8—OA 16 Confirmatory Sample Analytics

Analyte	Cleanup Goal (mg/kg)
Cadmium	2
Chromium	48.1
Copper	266
Mercury	0.07
bis(2-Ethylhexyl)phthalate	0.35

Table 9—Confirmatory Sample Details

SWMU	Excavated Area (square feet)	Number of Bottom Samples	Number of Sidewall Samples	Comments
SWMU 2-87.65	375	2	3	Two bottom samples spaced equidistant down the center. One sample from each sidewall
SWMU 77	220	2	4	Two bottom samples spaced equidistant down the center. One sample from each sidewall
SWMU 78.B	80	1	4	One bottom sample in the center. One sample from each sidewall
OA 16	100	1	4	One bottom sample in the center. One sample from each sidewall

Table 10—Stockpile Sampling Requirements

Stockpile Size (cubic yards)	Number of Samples
0 to 100	3
101 to 500	5

Table 11—QA Checklist

SWMU -----

	Criteria	Inspection Method	Inspected by	Approved (initial)
1. Mark Soil Excavation Area	+/- 1 foot	Tape measure	Construction Engineer	
2. Soil Manifesting	NA	visual	Boeing	
3. Spill Prevention	Place plastic inside stockpile cell	Visual	Construction Engineer	
	Cover stockpile cell	Visual	Construction Engineer	
	No free liquid in soil	Visual	Construction Engineer	
	Verify no soil is spilled in route to stockpile cell	Visual	Construction Engineer	
4. Sampling	Confirmatory bottom samples and sidewall samples spaced over bottom and sides of excavation as specified in Work Plan	Visual	Construction Engineer	
5. Decontamination	Decontaminate hoe bucket	Observation	Construction Engineer	
6. Backfill	As specified by Boeing	Visual- verify before shipment to site	Boeing Engineer	
7. Excavation area and depth	As delineated based on Work Plan Figures	Measure (using tape measure or equivalent). Measure area and depth in 4 corners and 2 locations in midsection	Construction Engineer	

APPENDIX A
ANALYTICAL DATA

Boeing Plant 2 - Soil Sampling Results for SWMU 2-87.65 (redefined 10/22/98)

Constituent	Station ID:	PL2-109B	PL2-109B	PL2-109B	PL2-109C	PL2-109C	PL2-109C
	Sample ID:	L09-MW109B-14	L09-MW109B-45	L09-MW109B-9	L09-MW109C-14	L09-MW109C-45	L09-MW109C-6
Depth (feet bgs):		14	45	9	14	45	6
Semi-Volatile Organic Compounds (ug/kg)							
2,4-Dimethylphenol		52.00 U		56.00 U	49.00 U		51.00 U
Acenaphthylene		26.00 U		28.00 U	25.00 U		26.00 U
Anthracene		26.00 U		28.00 U	25.00 U		26.00 U
Benzo(a)anthracene		26.00 U		28.00 U	25.00 U		26.00 U
Benzo(a)pyrene		26.00 U		28.00 U	25.00 U		26.00 U
Benzo(b)fluoranthene		26.00 U		28.00 U	25.00 U		26.00 U
Benzo(k)fluoranthene		26.00 U		28.00 U	25.00 U		26.00 U
bis(2-Ethylhexyl)phthalate		26.00 U		28.00 U	41.00		26.00 U
Chrysene		26.00 U		28.00 U	25.00 U		26.00 U
Di-n-butylphthalate		26.00 U		28.00 U	25.00 U		26.00 U
Dibenz(a,h)anthracene		26.00 U		28.00 U	25.00 U		26.00 U
Fluoranthene		26.00 U		14.00 J	27.00		26.00 U
Fluorene		26.00 U		28.00 U	25.00 U		26.00 U
Indeno(1,2,3-cd)pyrene		26.00 U		28.00 U	25.00 U		26.00 U
Naphthalene		26.00 U		28.00 U	25.00 U		26.00 U
Pyrene		26.00 U		14.00 J	26.00		26.00 U
Inorganics (Total) (mg/kg)							
Aluminum							
Antimony							
Arsenic		1.30	1.70	4.00	1.20	1.70	3.20
Beryllium							
Cadmium		0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
Chromium		12.00	13.70	19.50	12.10	13.10	11.80
Chromium VI							
Copper		10.90	14.20	24.10	9.50	16.50	12.20

A blank cell indicates analysis was not performed or the result was rejected during validation.

Boxed Cell Standard: BP2S1098

Shaded Cell Standard: BP2S1098

Boeing Plant 2 - Soil Sampling Results for SWMU 2-87.65 (redefined 10/22/98)

Constituent	Station ID:	PL2-109B	PL2-109B	PL2-109B	PL2-109C	PL2-109C	PL2-109C
	Sample ID:	L09-MW109B-14	L09-MW109B-45	L09-MW109B-9	L09-MW109C-14	L09-MW109C-45	L09-MW109C-6
Depth (feet bgs):		14	45	9	14	45	6
Cyanide							
Lead		3.00 U	3.00 U	8.00	3.00 U	3.00 U	6.00
Manganese							
Mercury		0.10 U	0.10 U	0.10 U	0.05 U	0.05 U	0.10 U
Nickel							
Selenium		0.10 U	0.10 U	0.10 U	0.20	0.20	0.30
Silver							
Thallium		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Vanadium							
Zinc		21.70	19.80	40.10	20.80	22.50	20.40
Pesticides/PCBs (ug/kg)							
Aroclor 1016/1242		15.00 U		15.00 U	300.00 U		15.00 U
Aroclor 1242							
Aroclor 1248		15.00 U		15.00 U	300.00 U		15.00 U
Aroclor 1254		15.00 U		15.00 U	140.00		15.00 U
Aroclor 1260		15.00 U		15.00 U	34.00		15.00 U
Total PCB		15.00 UT		15.00 UT	174.00 T		15.00 UT
Total Petroleum Hydrocarbons (mg/kg)							
TPH by 418.1							
TPH by Washington HCID 8015		10.00 U		10.00 U	290.00		10.00 U
Volatile Organic Compounds (ug/kg)							
1,1,1-Trichloroethane		20.00	1.30 U	13.00	1.80	1.40 U	2.30
1,1,2-Trichloroethane		4.00 U	1.30 U	1.30 U	1.30 U	1.40 U	1.20 U
1,1-Dichloroethene		4.00 U	1.30 U	8.10	1.30 U	1.40 U	1.20 U
Benzene		4.00 U	1.30 U	1.30 U	1.30 U	1.40 U	1.20 U
Ethylbenzene		4.00 U	1.30 U	1.30 U	1.30 U	1.40 U	1.20 U

A blank cell indicates analysis was not performed or the result was rejected during validation.

Boxed Cell Standard: BP2S1098

Shaded Cell Standard: BP2S1098

Boeing Plant 2 - Soil Sampling Results for SWMU 2-87.65 (redefined 10/22/98)

Constituent	Depth (feet bgs):	Station ID: Sample ID:	PL2-109B L09-MW109B-14	PL2-109B L09-MW109B-45	PL2-109B L09-MW109B-9	PL2-109C L09-MW109C-14	PL2-109C L09-MW109C-45	PL2-109C L09-MW109C-6
			14	45	9	14	45	6
Methylene Chloride			8.10 U	2.70 U	2.50 U	1.30 U	3.50 B	1.20 U
Tetrachloroethene			6.30	1.30 U	3.70	1.60	1.40 U	6.50
Toluene			4.00 U	1.30 U	5.10	1.30 U	1.40 U	2.10
Total Xylene			8.10 U	2.70 U	2.50 U	2.50 U	2.80 U	1.20 J
Trichloroethene			260.00	1.30 U	480.00	24.00	1.40 U	58.00
Vinyl Chloride			8.10 U	2.70 U	32.00	2.50 U	2.80 U	2.40 U

A blank cell indicates analysis was not performed or the result was rejected during validation.

Boxed Cell Standard: BP2S1098

Shaded Cell Standard: BP2S1098

Boeing Plant 2 - Soil Sampling Results for SWMU 2-87.65 (redefined 10/22/98)

Station ID:	PL2-109C	PL2-109C	SB-08707	SB-08707	SB-08708	SB-08708
Sample ID:	L09-MW109C-71	L09-MW109C-9	SB-08707-0030	SB-08707-1030	SB-08708-0030	SB-08708-1030
Constituent	Depth (feet bgs):	71.5	9	3 to N/A	3 to N/A	3 to N/A
Semi-Volatile Organic Compounds (ug/kg)						
2,4-Dimethylphenol		53.00 U	230.00 U	230.00 U	220.00 U	
Acenaphthylene		27.00 U	75.00 U	76.00 U	72.00 U	
Anthracene		27.00 U	75.00 U	76.00 U	72.00 U	
Benzo(a)anthracene		27.00 U	75.00 U	76.00 U	72.00 U	
Benzo(a)pyrene		27.00 U	75.00 U	76.00 U	72.00 U	
Benzo(b)fluoranthene		27.00 U	75.00 U	76.00 U	72.00 U	
Benzo(k)fluoranthene		27.00 U	75.00 U	76.00 U	72.00 U	
bis(2-Ethylhexyl)phthalate		27.00 U	75.00 U	76.00 U	72.00 U	
Chrysene		27.00 U	75.00 U	76.00 U	72.00 U	
Di-n-butylphthalate		27.00 U	75.00 U	76.00 U	72.00 U	
Dibenz(a,h)anthracene		27.00 U	75.00 U	76.00 U	72.00 U	
Fluoranthene		27.00 U	75.00 U	76.00 U	72.00 U	
Fluorene		27.00 U	75.00 U	76.00 U	72.00 U	
Indeno(1,2,3-cd)pyrene		27.00 U	75.00 U	76.00 U	72.00 U	
Naphthalene		27.00 U	75.00 U	76.00 U	72.00 U	
Pyrene		27.00 U	75.00 U	76.00 U	72.00 U	
Inorganics (Total) (mg/kg)						
Aluminum			12900.00		9410.00	9760.00
Antimony						
Arsenic	1.80	2.00	5.00 U		5.00 U	5.00 U
Beryllium			0.10 U		0.10	0.10
Cadmium	0.30 U	0.30 U	0.20 U		0.20 U	0.20 U
Chromium	12.00	15.20	15.50 J		11.00 J	11.00 J
Chromium VI			0.23 UJH		0.22 UJH	
Copper	15.90	15.50	12.50		8.40	8.50

A blank cell indicates analysis was not performed or the result was rejected during validation.

Boxed Cell Standard: BP2S1098

Shaded Cell Standard: BP2S1098

Boeing Plant 2 - Soil Sampling Results for SWMU 2-87.65 (redefined 10/22/98)

Constituent	Station ID:	PL2-109C	PL2-109C	SB-08707	SB-08707	SB-08708	SB-08708
	Sample ID:	L09-MW109C-71	L09-MW109C-9	SB-08707-0030	SB-08707-1030	SB-08708-0030	SB-08708-1030
Depth (feet bgs):		71.5	9	3 to N/A	3 to N/A	3 to N/A	3 to N/A
Cyanide							
Lead		3.00 U	3.00 U	5.00 J		7.00 J	8.00 J
Manganese				117.00		101.00	110.00
Mercury		0.10 U	0.05 U	0.06 UJ		0.05 UJ	0.04 UJ
Nickel				10.00 J+		9.00 J+	9.00 J+
Selenium		0.40	0.30	5.00 U		5.00 U	5.00 U
Silver				0.30 U		0.30 U	0.30 U
Thallium		0.10 U	0.10 U	5.00 U		6.00	5.00 U
Vanadium				48.70		35.60	35.40
Zinc		21.50	27.30	26.70		21.80	22.60
Pesticides/PCBs (ug/kg)							
Aroclor 1016/1242			15.00 U				
Aroclor 1242				110.00 UI	61.00 UI	36.00 U	
Aroclor 1248			15.00 U	600.00	700.00	36.00 U	
Aroclor 1254			15.00 U	1400.00	1200.00	36.00 U	
Aroclor 1260			15.00 U	220.00 UI	140.00 UI	36.00 U	
Total PCB			15.00 UT	2000.00 T	1900.00 T	36.00 UT	
Total Petroleum Hydrocarbons (mg/kg)							
TPH by 418.1							
TPH by Washington HCID 8015			10.00 U				
Volatile Organic Compounds (ug/kg)							
1,1,1-Trichloroethane		1.40 U	1.30 U	1.10 U		1.80	
1,1,2-Trichloroethane		1.40 U	1.30 U	1.10 U		1.10 U	
1,1-Dichloroethene		1.40 U	1.30 U	1.10 U		1.10 U	
Benzene		1.40 U	1.30 U	1.10 U		1.10 U	
Ethylbenzene		1.40 U	1.30 U	1.10 U		1.10 U	

A blank cell indicates analysis was not performed or the result was rejected during validation.

Boxed Cell Standard: BP2S1098

Shaded Cell Standard: BP2S1098

Boeing Plant 2 - Soil Sampling Results for SWMU 2-87.65 (redefined 10/22/98)

Station ID:		PL2-109C	PL2-109C	SB-08707	SB-08707	SB-08708	SB-08708
Sample ID:		L09-MW109C-71	L09-MW109C-9	SB-08707-0030	SB-08707-1030	SB-08708-0030	SB-08708-1030
Constituent	Depth (feet bgs):	71.5	9	3 to N/A	3 to N/A	3 to N/A	3 to N/A
Methylene Chloride		3.20 B	1.30 U	2.20 U		2.10 U	
Tetrachloroethene		1.40 U	1.30 U	4.20		7.20	
Toluene		1.40 U	1.30 U	1.10 U		2.00	
Total Xylene		2.90 U	2.70 U				
Trichloroethene		1.40 U	18.00	23.00		47.00	
Vinyl Chloride		2.90 U	2.70 U	2.20 U		2.10 U	

A blank cell indicates analysis was not performed or the result was rejected during validation.

Boxed Cell Standard: BP2S1098

Shaded Cell Standard: BP2S1098

Boeing Plant 2 - Soil Sampling Results for SWMU 2-87.65 (redefined 10/22/98)

Constituent	Depth (feet bgs):	Station ID:	SB-08711	SB-08711	SB-08711	SB-08712	SB-08712	SB-08712
		Sample ID:	SB-08711-0020	SB-08711-0070	SB-08711-0100	SB-08712-0020	SB-08712-0065	SB-08712-0085
			2 to N/A	7 to N/A	10 to N/A	2 to N/A	6.5 to N/A	8.5 to N/A
Semi-Volatile Organic Compounds (ug/kg)								
2,4-Dimethylphenol								
Acenaphthylene								
Anthracene								
Benzo(a)anthracene								
Benzo(a)pyrene								
Benzo(b)fluoranthene								
Benzo(k)fluoranthene								
bis(2-Ethylhexyl)phthalate								
Chrysene								
Di-n-butylphthalate								
Dibenz(a,h)anthracene								
Fluoranthene								
Fluorene								
Indeno(1,2,3-cd)pyrene								
Naphthalene								
Pyrene								
Inorganics (Total) (mg/kg)								
Aluminum								
Antimony								
Arsenic								
Beryllium								
Cadmium								
Chromium								
Chromium VI								
Copper								

A blank cell indicates analysis was not performed or the result was rejected during validation.

Boxed Cell Standard: BP2S1098

Shaded Cell Standard: BP2S1098

Boeing Plant 2 - Soil Sampling Results for SWMU 2-87.65 (redefined 10/22/98)

Constituent	Station ID:	SB-08711	SB-08711	SB-08711	SB-08712	SB-08712	SB-08712
	Sample ID:	SB-08711-0020	SB-08711-0070	SB-08711-0100	SB-08712-0020	SB-08712-0065	SB-08712-0085
Depth (feet bgs):		2 to N/A	7 to N/A	10 to N/A	2 to N/A	6.5 to N/A	8.5 to N/A
Cyanide							
Lead							
Manganese							
Mercury							
Nickel							
Selenium							
Silver							
Thallium							
Vanadium							
Zinc							
Pesticides/PCBs (ug/kg)							
Aroclor 1016/1242							
Aroclor 1242		37.00 U	47.00 U	43.00 U	36.00 U	47.00 U	46.00 U
Aroclor 1248		37.00 U	47.00 U	43.00 U	36.00 U	47.00 U	46.00 U
Aroclor 1254		37.00 U	47.00 U	43.00 U	36.00 U	47.00 U	46.00 U
Aroclor 1260		37.00 U	47.00 U	43.00 U	36.00 U	47.00 U	46.00 U
Total PCB		37.00 UT	47.00 UT	43.00 UT	36.00 UT	47.00 UT	46.00 UT
Total Petroleum Hydrocarbons (mg/kg)							
TPH by 418.1							
TPH by Washington HCID 8015							
Volatile Organic Compounds (ug/kg)							
1,1,1-Trichloroethane							
1,1,2-Trichloroethane							
1,1-Dichloroethene							
Benzene							
Ethylbenzene							

A blank cell indicates analysis was not performed or the result was rejected during validation.

Boxed Cell Standard: BP2S1098

Shaded Cell Standard: BP2S1098

Boeing Plant 2 - Soil Sampling Results for SWMU 2-87.65 (redefined 10/22/98)

		Station ID:	SB-08711	SB-08711	SB-08711	SB-08712	SB-08712	SB-08712
		Sample ID:	SB-08711-0020	SB-08711-0070	SB-08711-0100	SB-08712-0020	SB-08712-0065	SB-08712-0085
Constituent	Depth (feet bgs):		2 to N/A	7 to N/A	10 to N/A	2 to N/A	6.5 to N/A	8.5 to N/A
Methylene Chloride								
Tetrachloroethene								
Toluene								
Total Xylene								
Trichloroethene								
Vinyl Chloride								

A blank cell indicates analysis was not performed or the result was rejected during validation.

Boxed Cell Standard: BP2S1098

Shaded Cell Standard: BP2S1098

Boeing Plant 2 - Soil Sampling Results for SWMU 2-87.65 (redefined 10/22/98)

Constituent	Depth (feet bgs):	Station ID:	SB-08713	SB-08713	SB-08713	SB-08714	SB-08714	SB-08714
		Sample ID:	SB-08713-0020	SB-08713-0060	SB-08713-0100	SB-08714-0020	SB-08714-0070	SB-08714-0100
			2 to N/A	6 to N/A	10 to N/A	2 to N/A	7 to N/A	10 to N/A
Semi-Volatile Organic Compounds (ug/kg)								
2,4-Dimethylphenol								
Acenaphthylene								
Anthracene								
Benzo(a)anthracene								
Benzo(a)pyrene								
Benzo(b)fluoranthene								
Benzo(k)fluoranthene								
bis(2-Ethylhexyl)phthalate								
Chrysene								
Di-n-butylphthalate								
Dibenz(a,h)anthracene								
Fluoranthene								
Fluorene								
Indeno(1,2,3-cd)pyrene								
Naphthalene								
Pyrene								
Inorganics (Total) (mg/kg)								
Aluminum								
Antimony								
Arsenic								
Beryllium								
Cadmium								
Chromium								
Chromium VI								
Copper								

A blank cell indicates analysis was not performed or the result was rejected during validation.

Boxed Cell Standard: BP2S1098

Shaded Cell Standard: BP2S1098

Boeing Plant 2 - Soil Sampling Results for SWMU 2-87.65 (redefined 10/22/98)

	Station ID:	SB-08713	SB-08713	SB-08713	SB-08714	SB-08714	SB-08714
	Sample ID:	SB-08713-0020	SB-08713-0060	SB-08713-0100	SB-08714-0020	SB-08714-0070	SB-08714-0100
Constituent	Depth (feet bgs):	2 to N/A	6 to N/A	10 to N/A	2 to N/A	7 to N/A	10 to N/A
Cyanide							
Lead							
Manganese							
Mercury							
Nickel							
Selenium							
Silver							
Thallium							
Vanadium							
Zinc							
Pesticides/PCBs (ug/kg)							
Aroclor 1016/1242							
Aroclor 1242		38.00 U	47.00 U	43.00 U	42.00 U	48.00 U	43.00 U
Aroclor 1248		38.00 U	47.00 U	43.00 U	42.00 U	48.00 U	43.00 U
Aroclor 1254		800.00	47.00 U	200.00	42.00 U	48.00 U	43.00 U
Aroclor 1260		250.00	47.00 U	43.00 U	42.00 U	48.00 U	43.00 U
Total PCB		1050.00 T	47.00 UT	200.00 T	42.00 UT	48.00 UT	43.00 UT
Total Petroleum Hydrocarbons (mg/kg)							
TPH by 418.1					13.00 U	140.00	13.00 U
TPH by Washington HCID 8015							
Volatile Organic Compounds (ug/kg)							
1,1,1-Trichloroethane							
1,1,2-Trichloroethane							
1,1-Dichloroethene							
Benzene							
Ethylbenzene							

A blank cell indicates analysis was not performed or the result was rejected during validation.

Boxed Cell Standard: BP2S1098

Shaded Cell Standard: BP2S1098

Boeing Plant 2 - Soil Sampling Results for SWMU 2-87.65 (redefined 10/22/98)

		Station ID:	SB-08713	SB-08713	SB-08713	SB-08714	SB-08714	SB-08714
		Sample ID:	SB-08713-0020	SB-08713-0060	SB-08713-0100	SB-08714-0020	SB-08714-0070	SB-08714-0100
Constituent	Depth (feet bgs):		2 to N/A	6 to N/A	10 to N/A	2 to N/A	7 to N/A	10 to N/A
Methylene Chloride								
Tetrachloroethene								
Toluene								
Total Xylene								
Trichloroethene								
Vinyl Chloride								

A blank cell indicates analysis was not performed or the result was rejected during validation.

Boxed Cell Standard: BP2S1098

Shaded Cell Standard: BP2S1098

Boeing Plant 2 - Soil Sampling Results for SWMU 2-87.65 (redefined 10/22/98)

Station ID:		SB-08715	SB-08715	SB-08715	SB-08715	SB-10401	SB-10403
Sample ID:		SB-08715-0020	SB-08715-0070	SB-08715-0095	SB-08715-1020	W15-SB-10401-0100	W20-SB-10403-0015
Constituent	Depth (feet bgs):	2 to N/A	7 to N/A	9.5 to N/A	2 to N/A		1.5 to N/A
Semi-Volatile Organic Compounds (ug/kg)							
2,4-Dimethylphenol						160.00 U	
Acenaphthylene						79.00 U	
Anthracene						79.00 U	
Benzo(a)anthracene						79.00 U	
Benzo(a)pyrene						79.00 U	
Benzo(b)fluoranthene						79.00 U	
Benzo(k)fluoranthene						79.00 U	
bis(2-Ethylhexyl)phthalate						79.00 U	
Chrysene						79.00 U	
Di-n-butylphthalate						79.00 U	
Dibenz(a,h)anthracene						79.00 U	
Fluoranthene						79.00 U	
Fluorene						79.00 U	
Indeno(1,2,3-cd)pyrene						79.00 U	
Naphthalene						79.00 U	
Pyrene						79.00 U	
Inorganics (Total) (mg/kg)							
Aluminum							9270.00
Antimony						6.00 U	5.00 UJ
Arsenic						6.00 U	5.00 U
Beryllium						0.10 U	0.10
Cadmium						0.30	0.20 U
Chromium						11.80	10.90
Chromium VI							
Copper						10.20	8.60

A blank cell indicates analysis was not performed or the result was rejected during validation.

Boxed Cell Standard: BP2S1098

Shaded Cell Standard: BP2S1098

Boeing Plant 2 - Soil Sampling Results for SWMU 2-87.65 (redefined 10/22/98)

	Station ID:	SB-08715	SB-08715	SB-08715	SB-08715	SB-10401	SB-10403
	Sample ID:	SB-08715-0020	SB-08715-0070	SB-08715-0095	SB-08715-1020	W15-SB-10401-0100	W20-SB-10403-0015
Constituent	Depth (feet bgs):	2 to N/A	7 to N/A	9.5 to N/A	2 to N/A		1.5 to N/A
Cyanide						0.25 U	
Lead						5.00	4.00
Manganese							96.50
Mercury						0.05 U	0.05 U
Nickel						9.00	7.00
Selenium						6.00 U	5.00 U
Silver						0.40 U	0.30 U
Thallium						0.10 U	5.00 U
Vanadium							36.30
Zinc						23.80	26.80
Pesticides/PCBs (ug/kg)							
Aroclor 1016/1242						78.00 U	
Aroclor 1242		39.00 U	50.00 U	44.00 U	36.00 U		
Aroclor 1248		39.00 U	50.00 U	44.00 U	36.00 U	78.00 U	
Aroclor 1254		39.00 U	50.00 U	44.00 U	36.00 U	78.00 U	
Aroclor 1260		39.00 U	50.00 U	44.00 U	36.00 U	78.00 U	
Total PCB		39.00 UT	50.00 UT	44.00 UT	36.00 UT	78.00 UT	
Total Petroleum Hydrocarbons (mg/kg)							
TPH by 418.1		12.00 U	51.00	13.00 U	11.00 U		
TPH by Washington HCID 8015							
Volatile Organic Compounds (ug/kg)							
1,1,1-Trichloroethane						150.00 U	
1,1,2-Trichloroethane						150.00 U	
1,1-Dichloroethene						150.00 U	
Benzene						150.00 U	
Ethylbenzene						150.00 U	

A blank cell indicates analysis was not performed or the result was rejected during validation.

Boxed Cell Standard: BP2S1098

Shaded Cell Standard: BP2S1098

Boeing Plant 2 - Soil Sampling Results for SWMU 2-87.65 (redefined 10/22/98)

Constituent	Station ID:	SB-08715	SB-08715	SB-08715	SB-08715	SB-10401	SB-10403
	Sample ID:	SB-08715-0020	SB-08715-0070	SB-08715-0095	SB-08715-1020	W15-SB-10401-0100	W20-SB-10403-0015
Depth (feet bgs):		2 to N/A	7 to N/A	9.5 to N/A	2 to N/A		1.5 to N/A
Methylene Chloride						310.00 U	
Tetrachloroethene						150.00 U	
Toluene						150.00 U	
Total Xylene						310.00 U	
Trichloroethene						220.00	
Vinyl Chloride						310.00 U	

A blank cell indicates analysis was not performed or the result was rejected during validation.

Boxed Cell Standard: BP2S1098

Shaded Cell Standard: BP2S1098

Boeing Plant 2 - Soil Sampling Results for SWMU 2-87.65 (redefined 10/22/98)

	Station ID:	SB-10403	SB-10403	SB-10404	SB-10404	SB-10404
	Sample ID:	W20-SB-10403-0060	W20-SB-10403-0105	W20-SB-10404-0015	W20-SB-10404-0065	W20-SB-10404-0105
Constituent	Depth (feet bgs):	6 to N/A	10.5 to N/A	1.5 to N/A	6.5 to N/A	10.5 to N/A
Semi-Volatile Organic Compounds (ug/kg)						
2,4-Dimethylphenol						
Acenaphthylene						
Anthracene						
Benzo(a)anthracene						
Benzo(a)pyrene						
Benzo(b)fluoranthene						
Benzo(k)fluoranthene						
bis(2-Ethylhexyl)phthalate						
Chrysene						
Di-n-butylphthalate						
Dibenz(a,h)anthracene						
Fluoranthene						
Fluorene						
Indeno(1,2,3-cd)pyrene						
Naphthalene						
Pyrene						
Inorganics (Total) (mg/kg)						
Aluminum		11400.00	10300.00	9420.00	11600.00	9710.00
Antimony		7.00 UJ	6.00 UJ	5.00 UJ	7.00 UJ	7.00 UJ
Arsenic		7.00 U	6.00 U	5.00 U	7.00 U	7.00 U
Beryllium		0.10	0.10 U	0.10	0.20	0.10 U
Cadmium		0.30 U	0.30 U	0.20 U	0.30 U	0.30 U
Chromium		12.70	13.30	19.50	12.90	10.60
Chromium VI						
Copper		11.20	10.40	7.50	10.40	9.20

A blank cell indicates analysis was not performed or the result was rejected during validation.

Boxed Cell Standard: BP2S1098

Shaded Cell Standard: BP2S1098

Boeing Plant 2 - Soil Sampling Results for SWMU 2-87.65 (redefined 10/22/98)

Constituent	Station ID:	SB-10403	SB-10403	SB-10404	SB-10404	SB-10404
	Sample ID:	W20-SB-10403-0060	W20-SB-10403-0105	W20-SB-10404-0015	W20-SB-10404-0065	W20-SB-10404-0105
Depth (feet bgs):		6 to N/A	10.5 to N/A	1.5 to N/A	6.5 to N/A	10.5 to N/A
Cyanide						
Lead		4.00	4.00	3.00	5.00	3.00
Manganese		92.80	122.00	86.90	96.60	121.00
Mercury		0.05 U	0.05 U	0.05 U	0.06 U	0.07 U
Nickel		9.00	9.00	7.00	9.00	8.00
Selenium		7.00 U	6.00 U	5.00 U	7.00 U	7.00 U
Silver		0.40 U	0.40 U	0.30 U	0.40 U	0.40 U
Thallium		7.00 U	6.00 U	5.00 U	7.00 U	7.00 U
Vanadium		41.30	46.40	35.80	41.00	39.40
Zinc		22.80	24.70	20.40	24.00	22.60
Pesticides/PCBs (ug/kg)						
Aroclor 1016/1242						
Aroclor 1242						
Aroclor 1248						
Aroclor 1254						
Aroclor 1260						
Total PCB						
Total Petroleum Hydrocarbons (mg/kg)						
TPH by 418.1						
TPH by Washington HCID 8015						
Volatile Organic Compounds (ug/kg)						
1,1,1-Trichloroethane						
1,1,2-Trichloroethane						
1,1-Dichloroethene						
Benzene						
Ethylbenzene						

A blank cell indicates analysis was not performed or the result was rejected during validation.

Boxed Cell Standard: BP2S1098

Shaded Cell Standard: BP2S1098

Boeing Plant 2 - Soil Sampling Results for SWMU 2-87.65 (redefined 10/22/98)

Station ID:		SB-10403	SB-10403	SB-10404	SB-10404	SB-10404
Sample ID:		W20-SB-10403-0060	W20-SB-10403-0105	W20-SB-10404-0015	W20-SB-10404-0065	W20-SB-10404-0105
Constituent	Depth (feet bgs):	6 to N/A	10.5 to N/A	1.5 to N/A	6.5 to N/A	10.5 to N/A
Methylene Chloride						
Tetrachloroethene						
Toluene						
Total Xylene						
Trichloroethene						
Vinyl Chloride						

A blank cell indicates analysis was not performed or the result was rejected during validation.

Boxed Cell Standard: BP2S1098

Shaded Cell Standard: BP2S1098

Boeing Plant 2 - Soil Sampling Results for SWMU 77 (Redefined 10/22/98)

	Station ID:	SB-08704	SB-08704	SB-08704	SB-08705	SB-08705	SB-08705
	Sample ID:	W20-SB-08704-0025	W20-SB-08704-0050	W20-SB-08704-0075	W20-SB-08705-0025	W20-SB-08705-0050	W20-SB-08705-0075
Constituent	Depth (feet bgs):	2.5 to N/A	5 to N/A	7.5 to N/A	2.5 to N/A	5 to N/A	7.5 to N/A
Inorganics (Total) (mg/kg)							
Aluminum		8640.00	17500.00	9490.00	8990.00	14200.00	19000.00
Antimony		5.00 UJ	6.00 UJ	6.00 UJ	5.00 UJ	6.00 UJ	7.00 UJ
Arsenic		5.00 U	6.00 U	6.00 U	5.00 U	6.00 U	7.00 U
Beryllium		0.10 U	0.20	0.10	0.10	0.30	0.30
Cadmium		0.20 U	0.30 U	0.20 U	0.20 U	0.20 U	0.30 U
Chromium		9.50	34.10	252.00	12.10	115.00	18.80
Chromium VI		0.21 UJH	0.27 UJH	0.23 UJH	0.22 UJH	0.28 UJH	0.28 UJH
Copper		6.90	16.30	9.30	8.30	19.50	21.60
Lead		3.00	3.00	2.00 U	2.00	7.00	5.00
Manganese		85.40	266.00	97.80	94.40	143.00	238.00
Mercury		0.05 U	0.06 U	0.05 U	0.05 U	0.06	0.05
Nickel		7.00	13.00	8.00	8.00	15.00	15.00
Selenium		5.00 U	6.00 U	6.00 U	5.00 U	6.00 U	7.00 U
Silver		0.30 U	0.40 U	0.30 U	0.30 U	0.40 U	0.40 U
Thallium		5.00 U	6.00 U	6.00 U	5.00 U	6.00 U	7.00 U
Vanadium		33.90	47.10	36.50	36.40	47.40	53.40
Zinc		19.50	26.00	25.70	20.50	34.00	33.30
Pesticides/PCBs (ug/kg)							
Aroclor 1016/1242		71.00 U	86.00 U	77.00 U	73.00 U	96.00 U	88.00 U
Aroclor 1242							
Aroclor 1248		71.00 U	86.00 U	77.00 U	73.00 U	96.00 U	88.00 U
Aroclor 1254		71.00 U	86.00 U	77.00 U	73.00 U	96.00 U	88.00 U
Aroclor 1260		71.00 U	86.00 U	77.00 U	73.00 U	96.00 U	88.00 U
Total PCB		71.00 UT	86.00 UT	77.00 UT	73.00 UT	96.00 UT	88.00 UT

A blank cell indicates analysis was not performed or the result was rejected during validation.

Boxed Cell Standard: BP2S1098

Shaded Cell Standard: BP2S1098

Boeing Plant 2 - Soil Sampling Results for SWMU 77 (Redefined 10/22/98)

Station ID:		SB-08706	SB-08706	SB-08706	SB-08709	SB-08709	SB-08709
Sample ID:		W20-SB-08706-0075	W20-SB-08706-0100	W20-SB-08706-0125	SB-08709-0060	SB-08709-0070	SB-08709-0105
Constituent	Depth (feet bgs):	7.5 to N/A	10 to N/A	12.5 to N/A	6 to N/A	7 to N/A	10.5 to N/A
Inorganics (Total) (mg/kg)							
Aluminum		11900.00	11100.00	14000.00			
Antimony		6.00 UJ	6.00 UJ	7.00 UJ			
Arsenic		6.00 U	6.00 U	7.00 U			
Beryllium		0.20	0.20	0.20			
Cadmium		0.20 U	0.30 U	0.30 U			
Chromium		14.90	14.30	15.80			
Chromium VI		0.25 U	0.26 U	0.28 U			
Copper		14.90	11.50	15.80			
Lead		5.00	4.00	6.00			
Manganese		143.00	161.00	140.00			
Mercury		0.05 U	0.06 U	0.07 U			
Nickel		10.00	9.00	10.00			
Selenium		6.00 U	6.00 U	7.00 U			
Silver		0.40 U	0.40 U	0.40 U			
Thallium		6.00 U	6.00 U	7.00 U			
Vanadium		46.40	46.40	50.80			
Zinc		25.50	23.50	28.10			
Pesticides/PCBs (ug/kg)							
Aroclor 1016/1242		84.00 UJH	87.00 U	87.00 UJH			
Aroclor 1242					45.00 U	56.00 U	43.00 U
Aroclor 1248		84.00 UJH	87.00 U	87.00 UJH	45.00 U	56.00 U	43.00 U
Aroclor 1254		84.00 UJH	87.00 U	87.00 UJH	45.00 U	56.00 U	43.00 U
Aroclor 1260		84.00 UJH	87.00 U	87.00 UJH	45.00 U	56.00 U	43.00 U
Total PCB		84.00 UT	87.00 UT	87.00 UT	45.00 UT	56.00 UT	43.00 UT

A blank cell indicates analysis was not performed or the result was rejected during validation.

Boxed Cell Standard: BP2S1098

Shaded Cell Standard: BP2S1098

Boeing Plant 2 - Soil Sampling Results for SWMU 77 (Redefined 10/22/98)

Station ID:		SB-08712	SB-08712	SB-08712	SB-11001	SB-11001	SB-11001
Sample ID:		SB-08712-0020	SB-08712-0065	SB-08712-0085	W20-SB-11001-0015	W20-SB-11001-0060	W20-SB-11001-0095
Constituent	Depth (feet bgs):	2 to N/A	6.5 to N/A	8.5 to N/A	1.5 to N/A	6 to N/A	9.5 to N/A
Inorganics (Total) (mg/kg)							
Aluminum							
Antimony							
Arsenic							
Beryllium							
Cadmium							
Chromium							
Chromium VI							
Copper							
Lead							
Manganese							
Mercury							
Nickel							
Selenium							
Silver							
Thallium							
Vanadium							
Zinc							
Pesticides/PCBs (ug/kg)							
Aroclor 1016/1242					70.00 U	90.00 U	90.00 U
Aroclor 1242		36.00 U	47.00 U	46.00 U			
Aroclor 1248		36.00 U	47.00 U	46.00 U	70.00 U	90.00 U	90.00 U
Aroclor 1254		36.00 U	47.00 U	46.00 U	70.00 U	90.00 U	90.00 U
Aroclor 1260		36.00 U	47.00 U	46.00 U	70.00 U	90.00 U	90.00 U
Total PCB		36.00 UT	47.00 UT	46.00 UT	70.00 UT	90.00 UT	90.00 UT

A blank cell indicates analysis was not performed or the result was rejected during validation.

Boxed Cell Standard: BP2S1098

Shaded Cell Standard: BP2S1098

Boeing Plant 2 - Soil Sampling Results for SWMU 77 (Redefined 10/22/98)

Station ID:		SB-11001
Sample ID:		W20-SB-11001-1095
Constituent	Depth (feet bgs):	9.5 to N/A
Inorganics (Total) (mg/kg)		
Aluminum		
Antimony		
Arsenic		
Beryllium		
Cadmium		
Chromium		
Chromium VI		
Copper		
Lead		
Manganese		
Mercury		
Nickel		
Selenium		
Silver		
Thallium		
Vanadium		
Zinc		
Pesticides/PCBs (ug/kg)		
Aroclor 1016/1242		
Aroclor 1242		
Aroclor 1248		
Aroclor 1254		
Aroclor 1260		
Total PCB		

A blank cell indicates analysis was not performed or the result was rejected during validation.

Boxed Cell Standard: BP2S1098

Shaded Cell Standard: BP2S1098

Table 3: Summary of Existing Sample Results - OA 16 Constituents of Concern

Station ID:	NS-01-104	NS-02-104	SB-10401	SB-10402	SB-10403	SB-10403
Sample ID:	W15-W1-NS-01	W15-W1-NS-02	W15-SB-10401-0100	W15-SB-10402-0080	W20-SB-10403-0015	W20-SB-10403-0060
Constituent	Depth (feet bgs):				1.5 to N/A	6 to N/A
Volatile Organic Compounds (ug/kg)						
1,1,1-Trichloroethane		120.00 U	1.10 U	150.00 U	6.70	
1,1,2,2-Tetrachloroethane		120.00 U	1.10 U	150.00 U	1.40 U	
1,1,2-Trichloroethane		120.00 U	1.10 U	150.00 U	3.70	
1,1,2-Trichlorotrifluoroethane		250.00 U	2.20 U	310.00 U	2.80 U	
1,1-Dichloroethane		120.00 U	1.10 U	150.00 U	210.00	
1,1-Dichloroethene		120.00 U	1.10 U	150.00 U	12.00	
1,2-Dichloroethane		120.00 U	1.10 U	150.00 U	8.10	
1,2-Dichloropropane		120.00 U	1.10 U	150.00 U	1.40 U	
2-Butanone		2300.00 UB	5.40 U	2000.00 UB	12.00 UB	
2-Chloroethylvinylether		620.00 U	5.40 U	770.00 U	7.00 U	
2-Hexanone		620.00 U	5.40 U	770.00 U	7.00 U	
4-Methyl-2-Pentanone		620.00 U	5.40 U	770.00 U	7.00 U	
Acetone		620.00 U	7.90	770.00 U	54.00	
Benzene		120.00 U	1.10 U	150.00 U	1.40	
Bromodichloromethane		120.00 U	1.10 U	150.00 U	1.40 U	
Bromoform		120.00 U	1.10 U	150.00 U	1.40 U	
Bromomethane		250.00 U	2.20 U	310.00 U	2.80 U	
Carbon Disulfide		120.00 U	1.10 U	150.00 U	1.70	
Carbon Tetrachloride		120.00 U	1.10 U	150.00 U	1.40 U	
Chlorobenzene		120.00 U	1.10 U	150.00 U	1.40 U	
Chloroethane		250.00 U	2.20 U	310.00 U	2.80 U	
Chloroform		120.00 U	1.10 U	150.00 U	1.40 U	
Chloromethane		250.00 U	2.20 U	310.00 U	2.80 U	
cis-1,2-Dichloroethene		120.00 U	1.10 U	150.00 U	530.00 D	
cis-1,3-Dichloropropene		120.00 U	1.10 U	150.00 U	1.40 U	

Detected values which exceed RFI reference levels are boxed. A blank cell indicates analysis was not performed or the result was rejected during validation.

Boxed Cell Standard: RFI1CSOI

Table 3: Summary of Existing Sample Results - OA 16 Constituents of Concern

Station ID:	NS-01-104	NS-02-104	SB-10401	SB-10402	SB-10403	SB-10403
Sample ID:	W15-W1-NS-01	W15-W1-NS-02	W15-SB-10401-0100	W15-SB-10402-0080	W20-SB-10403-0015	W20-SB-10403-0060
Constituent	Depth (feet bgs):				1.5 to N/A	6 to N/A
Dibromochloromethane		120.00 U	1.10 U	150.00 U	1.40 U	
Ethylbenzene		120.00 U	1.10 U	150.00 U	1.40 U	
Methylene Chloride		250.00 U	2.20 U	310.00 U	2.80 U	
Styrene		120.00 U	1.10 U	150.00 U	1.40 U	
Tetrachloroethene		120.00 U	1.10 U	150.00 U	170.00	
Toluene		120.00 U	1.10 U	150.00 U	10.00	
Total Xylene		250.00 U	2.20 U	310.00 U	2.80 U	
trans-1,2-Dichloroethene		120.00 U	1.10 U	150.00 U	37.00	
trans-1,3-Dichloropropene		120.00 U	1.10 U	150.00 U	1.40 U	
Trichloroethene		120.00 U	4.60	220.00	5900.00 D	
Trichlorofluoromethane		250.00 U	2.20 U	310.00 U	2.80 U	
Vinyl Acetate		620.00 U	5.40 U	770.00 U	7.00 U	
Vinyl Chloride		250.00 U	2.20 U	310.00 U	2.80 U	
Semi-Volatile Organic Compounds (ug/kg)						
1,2,4-Trichlorobenzene		69.00 U	62.00 U	79.00 U	90.00 U	
1,2-Dichlorobenzene		69.00 U	62.00 U	79.00 U	90.00 U	
1,3-Dichlorobenzene		69.00 U	62.00 U	79.00 U	90.00 U	
1,4-Dichlorobenzene		69.00 U	62.00 U	79.00 U	90.00 U	
2,2'-Oxybis(1-Chloropropane)		69.00 U	62.00 U	79.00 U	90.00 U	
2,4,5-Trichlorophenol		350.00 U	310.00 U	390.00 U	450.00 U	
2,4,6-Trichlorophenol		350.00 U	310.00 U	390.00 U	450.00 U	
2,4-Dichlorophenol		210.00 U	190.00 U	240.00 U	270.00 U	
2,4-Dimethylphenol		140.00 U	120.00 U	160.00 U	180.00 U	
2,4-Dinitrophenol		690.00 U	620.00 U	790.00 U	900.00 U	
2,4-Dinitrotoluene		350.00 U	310.00 U	390.00 U	450.00 U	
2,6-Dinitrotoluene		350.00 U	310.00 U	390.00 U	450.00 U	

Detected values which exceed RFI reference levels are boxed. A blank cell indicates analysis was not performed or the result was rejected during validation.

Boxed Cell Standard: RFI1CSOI

Table 3: Summary of Existing Sample Results - OA 16 Constituents of Concern

Constituent	Depth (feet bgs):	Station ID: Sample ID:	NS-01-104 W15-W1-NS-01	NS-02-104 W15-W1-NS-02	SB-10401 W15-SB-10401-0100	SB-10402 W15-SB-10402-0080	SB-10403 W20-SB-10403-0015	SB-10403 W20-SB-10403-0060
							1.5 to N/A	6 to N/A
2-Chloronaphthalene			69.00 U	62.00 U	79.00 U	90.00 U		
2-Chlorophenol			69.00 U	62.00 U	79.00 U	90.00 U		
2-Methylnaphthalene			69.00 U	62.00 U	79.00 U	90.00 U		
2-Methylphenol			69.00 U	62.00 U	79.00 U	90.00 U		
2-Nitroaniline			350.00 U	310.00 U	390.00 U	450.00 U		
2-Nitrophenol			350.00 U	310.00 U	390.00 U	450.00 U		
3,3'-Dichlorobenzidine			350.00 U	310.00 U	390.00 U	450.00 U		
3-Nitroaniline			350.00 U	310.00 U	390.00 U	450.00 U		
4,6-Dinitro-2-methylphenol			690.00 U	620.00 U	790.00 U	900.00 U		
4-Bromophenyl-phenylether			69.00 U	62.00 U	79.00 U	90.00 U		
4-Chloro-3-methylphenol			140.00 U	120.00 U	160.00 U	180.00 U		
4-Chloroaniline			210.00 U	190.00 U	240.00 U	270.00 U		
4-Chlorophenyl-phenylether			69.00 U	62.00 U	79.00 U	90.00 U		
4-Methylphenol			69.00 U	62.00 U	79.00 U	90.00 U		
4-Nitroaniline			350.00 U	310.00 U	390.00 U	450.00 U		
4-Nitrophenol			350.00 U	310.00 U	390.00 U	450.00 U		
Benzoic acid			690.00 U	620.00 U	790.00 U	900.00 U		
Benzyl alcohol			350.00 U	310.00 U	390.00 U	450.00 U		
bis(2-Chloroethoxy)methane			69.00 U	62.00 U	79.00 U	90.00 U		
bis(2-Chloroethyl)ether			69.00 U	62.00 U	79.00 U	90.00 U		
bis(2-Ethylhexyl)phthalate			650.00	62.00 U	79.00 U	90.00 U		
Butylbenzylphthalate			69.00 U	62.00 U	79.00 U	90.00 U		
Carbazole			69.00 U	62.00 U	79.00 U	90.00 U		
Di-n-butylphthalate			69.00 U	62.00 U	79.00 U	90.00 U		
Di-n-octylphthalate			69.00 U	62.00 U	79.00 U	90.00 U		
Dibenzofuran			69.00 U	62.00 U	79.00 U	90.00 U		
Diethylphthalate			69.00 U	62.00 U	79.00 U	90.00 U		

Detected values which exceed RFI reference levels are boxed. A blank cell indicates analysis was not performed or the result was rejected during validation.

Boxed Cell Standard: RFI1CSOI

Table 3: Summary of Existing Sample Results - OA 16 Constituents of Concern

Constituent	Station ID:	NS-01-104	NS-02-104	SB-10401	SB-10402	SB-10403	SB-10403
	Sample ID:	W15-W1-NS-01	W15-W1-NS-02	W15-SB-10401-0100	W15-SB-10402-0080	W20-SB-10403-0015	W20-SB-10403-0060
	Depth (feet bgs):					1.5 to N/A	6 to N/A
Dimethylphthalate		160.00	62.00 U	79.00 U	90.00 U		
Hexachlorobenzene		69.00 U	62.00 U	79.00 U	90.00 U		
Hexachlorobutadiene		140.00 U	120.00 U	160.00 U	180.00 U		
Hexachlorocyclopentadiene		350.00 U	310.00 U	390.00 U	450.00 U		
Hexachloroethane		140.00 U	120.00 U	160.00 U	180.00 U		
Isophorone		69.00 U	62.00 U	79.00 U	90.00 U		
N-Nitroso-di-n-propylamine		69.00 U	62.00 U	79.00 U	90.00 U		
N-Nitrosodiphenylamine		69.00 U	62.00 U	79.00 U	90.00 U		
Nitrobenzene		69.00 U	62.00 U	79.00 U	90.00 U		
Pentachlorophenol		350.00 U	310.00 U	390.00 U	450.00 U		
Phenol		140.00 U	120.00 U	160.00 U	180.00 U		
Naphthalene		69.00 U	62.00 U	79.00 U	90.00 U		
Acenaphthylene		69.00 U	62.00 U	79.00 U	90.00 U		
Acenaphthene		69.00 U	62.00 U	79.00 U	90.00 U		
Fluorene		69.00 U	62.00 U	79.00 U	90.00 U		
Phenanthrene		69.00 U	62.00 U	79.00 U	90.00 U		
Anthracene		69.00 U	62.00 U	79.00 U	90.00 U		
Total LPAH		69.00 UT	62.00 UT	79.00 UT	90.00 UT		
Fluoranthene		69.00 U	62.00 U	79.00 U	90.00 U		
Pyrene		69.00 U	62.00 U	79.00 U	90.00 U		
Benzo(a)anthracene		69.00 U	62.00 U	79.00 U	90.00 U		
Chrysene		69.00 U	62.00 U	79.00 U	90.00 U		
Benzo(b)fluoranthene		69.00 U	62.00 U	79.00 U	90.00 U		
Benzo(k)fluoranthene		69.00 U	62.00 U	79.00 U	90.00 U		
Benzo(a)pyrene		69.00 U	62.00 U	79.00 U	90.00 U		
Indeno(1,2,3-cd)pyrene		69.00 U	62.00 U	79.00 U	90.00 U		
Dibenz(a,h)anthracene		69.00 U	62.00 U	79.00 U	90.00 U		

Detected values which exceed RFI reference levels are boxed. A blank cell indicates analysis was not performed or the result was rejected during validation.

Boxed Cell Standard: RFI1CSOI

Table 3: Summary of Existing Sample Results - OA 16 Constituents of Concern

Constituent	Station ID:	NS-01-104	NS-02-104	SB-10401	SB-10402	SB-10403	SB-10403
	Sample ID:	W15-W1-NS-01	W15-W1-NS-02	W15-SB-10401-0100	W15-SB-10402-0080	W20-SB-10403-0015	W20-SB-10403-0060
Depth (feet bgs):						1.5 to N/A	6 to N/A
Benzo(g,h,i)perylene		69.00 U	62.00 U	79.00 U	90.00 U		
Total HPAH		69.00 UT	62.00 UT	79.00 UT	90.00 UT		
Pesticides/PCBs (ug/kg)							
Aroclor 1248		160.00 UI	62.00 U	78.00 U	90.00 U		
Aroclor 1254		90.00 UI	62.00 U	78.00 U	90.00 U		
Aroclor 1260		69.00 U	62.00 U	78.00 U	90.00 U		
Aroclor 1016/1242		300.00 UI	62.00 U	78.00 U	90.00 U		
Total PCB		300.00 UT	62.00 UT	78.00 UT	90.00 UT		
Inorganics (Total) (mg/kg)							
Aluminum						9270.00	11400.00
Antimony		6.00	5.00 U	6.00 U	6.00 U	5.00 UJ	7.00 UJ
Arsenic		5.00 U	5.00 U	6.00 U	6.00 U	5.00 U	7.00 U
Barium		22.70	21.80	25.00	66.10	24.20	26.70
Beryllium		0.10	0.10	0.10 U	0.40	0.10	0.10
Cadmium		198.00	240.00	0.30	0.40	0.20 U	0.30 U
Calcium						5190.00	5530.00
Chromium		14.20	75.90	11.80	28.20	10.90	12.70
Cobalt						3.50	4.10
Copper		3430.00	4350.00	10.20	42.50	8.60	11.20
Cyanide		0.20 U	5.50	0.25 U	0.22 U		
Iron						10500.00	11600.00
Lead		11.00	4.00	5.00	19.00	4.00	4.00
Magnesium						1980.00	2240.00
Manganese						96.50	92.80
Mercury		0.04 U	0.05 U	0.05 U	0.11	0.05 U	0.05 U
Nickel		11.00	8.00	9.00	22.00	7.00	9.00

Detected values which exceed RFI reference levels are boxed. A blank cell indicates analysis was not performed or the result was rejected during validation.

Boxed Cell Standard: RFI1CSOI

Table 3: Summary of Existing Sample Results - OA 16 Constituents of Concern

Constituent	Station ID:	NS-01-104	NS-02-104	SB-10401	SB-10402	SB-10403	SB-10403
	Sample ID:	W15-W1-NS-01	W15-W1-NS-02	W15-SB-10401-0100	W15-SB-10402-0080	W20-SB-10403-0015	W20-SB-10403-0060
Depth (feet bgs):						1.5 to N/A	6 to N/A
Potassium						650.00	850.00
Selenium		5.00 U	5.00 U	6.00 U	6.00 U	5.00 U	7.00 U
Silver		0.30 U	0.30 U	0.40 U	0.40	0.30 U	0.40 U
Sodium						849.00	1150.00
Thallium		0.10	0.10 U	0.10 U	0.60 U	5.00 U	7.00 U
Vanadium						36.30	41.30
Zinc		49.00	83.60	23.80	54.50	26.80	22.80

Detected values which exceed RFI reference levels are boxed. A blank cell indicates analysis was not performed or the result was rejected during validation.

Boxed Cell Standard: RFI1CSOI

Table 3: Summary of Existing Sample Results - OA 16 Constituents of Concern

Constituent	Depth (feet bgs):	Station ID:	SB-10403	SB-10404	SB-10404	SB-10404	SB-10405	SB-10405
		Sample ID:	W20-SB-10403-0105	W20-SB-10404-0015	W20-SB-10404-0065	W20-SB-10404-0105	W20-SB-10405-0015	W20-SB-10405-0065
			10.5 to N/A	1.5 to N/A	6.5 to N/A	10.5 to N/A	1.5 to N/A	6.5 to N/A
Volatile Organic Compounds (ug/kg)								
1,1,1-Trichloroethane								
1,1,2,2-Tetrachloroethane								
1,1,2-Trichloroethane								
1,1,2-Trichlorotrifluoroethane								
1,1-Dichloroethane								
1,1-Dichloroethene								
1,2-Dichloroethane								
1,2-Dichloropropane								
2-Butanone								
2-Chloroethylvinylether								
2-Hexanone								
4-Methyl-2-Pentanone								
Acetone								
Benzene								
Bromodichloromethane								
Bromoform								
Bromomethane								
Carbon Disulfide								
Carbon Tetrachloride								
Chlorobenzene								
Chloroethane								
Chloroform								
Chloromethane								
cis-1,2-Dichloroethene								
cis-1,3-Dichloropropene								

Detected values which exceed RFI reference levels are boxed. A blank cell indicates analysis was not performed or the result was rejected during validation.

Boxed Cell Standard: RFI1CSOI

Table 3: Summary of Existing Sample Results - OA 16 Constituents of Concern

Constituent	Station ID:	SB-10403	SB-10404	SB-10404	SB-10404	SB-10405	SB-10405
	Sample ID:	W20-SB-10403-0105	W20-SB-10404-0015	W20-SB-10404-0065	W20-SB-10404-0105	W20-SB-10405-0015	W20-SB-10405-0065
Depth (feet bgs):		10.5 to N/A	1.5 to N/A	6.5 to N/A	10.5 to N/A	1.5 to N/A	6.5 to N/A
Dibromochloromethane							
Ethylbenzene							
Methylene Chloride							
Styrene							
Tetrachloroethene							
Toluene							
Total Xylene							
trans-1,2-Dichloroethene							
trans-1,3-Dichloropropene							
Trichloroethene							
Trichlorofluoromethane							
Vinyl Acetate							
Vinyl Chloride							
Semi-Volatile Organic Compounds (ug/kg)							
1,2,4-Trichlorobenzene							
1,2-Dichlorobenzene							
1,3-Dichlorobenzene							
1,4-Dichlorobenzene							
2,2'-Oxybis(1-Chloropropane)							
2,4,5-Trichlorophenol							
2,4,6-Trichlorophenol							
2,4-Dichlorophenol							
2,4-Dimethylphenol							
2,4-Dinitrophenol							
2,4-Dinitrotoluene							
2,6-Dinitrotoluene							

Detected values which exceed RFI reference levels are boxed. A blank cell indicates analysis was not performed or the result was rejected during validation.

Boxed Cell Standard: RFI1CSOI

Table 3: Summary of Existing Sample Results - OA 16 Constituents of Concern

Constituent	Station ID:	SB-10403	SB-10404	SB-10404	SB-10404	SB-10405	SB-10405
	Sample ID:	W20-SB-10403-0105	W20-SB-10404-0015	W20-SB-10404-0065	W20-SB-10404-0105	W20-SB-10405-0015	W20-SB-10405-0065
Depth (feet bgs):		10.5 to N/A	1.5 to N/A	6.5 to N/A	10.5 to N/A	1.5 to N/A	6.5 to N/A
2-Chloronaphthalene							
2-Chlorophenol							
2-Methylnaphthalene							
2-Methylphenol							
2-Nitroaniline							
2-Nitrophenol							
3,3'-Dichlorobenzidine							
3-Nitroaniline							
4,6-Dinitro-2-methylphenol							
4-Bromophenyl-phenylether							
4-Chloro-3-methylphenol							
4-Chloroaniline							
4-Chlorophenyl-phenylether							
4-Methylphenol							
4-Nitroaniline							
4-Nitrophenol							
Benzoic acid							
Benzyl alcohol							
bis(2-Chloroethoxy)methane							
bis(2-Chloroethyl)ether							
bis(2-Ethylhexyl)phthalate							
Butylbenzylphthalate							
Carbazole							
Di-n-butylphthalate							
Di-n-octylphthalate							
Dibenzofuran							
Diethylphthalate							

Detected values which exceed RFI reference levels are boxed. A blank cell indicates analysis was not performed or the result was rejected during validation.

Boxed Cell Standard: RFI1CSOI

Table 3: Summary of Existing Sample Results - OA 16 Constituents of Concern

Constituent	Station ID:	SB-10403	SB-10404	SB-10404	SB-10404	SB-10405	SB-10405
	Sample ID:	W20-SB-10403-0105	W20-SB-10404-0015	W20-SB-10404-0065	W20-SB-10404-0105	W20-SB-10405-0015	W20-SB-10405-0065
Depth (feet bgs):		10.5 to N/A	1.5 to N/A	6.5 to N/A	10.5 to N/A	1.5 to N/A	6.5 to N/A
Dimethylphthalate							
Hexachlorobenzene							
Hexachlorobutadiene							
Hexachlorocyclopentadiene							
Hexachloroethane							
Isophorone							
N-Nitroso-di-n-propylamine							
N-Nitrosodiphenylamine							
Nitrobenzene							
Pentachlorophenol							
Phenol							
Naphthalene							
Acenaphthylene							
Acenaphthene							
Fluorene							
Phenanthrene							
Anthracene							
Total LPAH							
Fluoranthene							
Pyrene							
Benzo(a)anthracene							
Chrysene							
Benzo(b)fluoranthene							
Benzo(k)fluoranthene							
Benzo(a)pyrene							
Indeno(1,2,3-cd)pyrene							
Dibenz(a,h)anthracene							

Detected values which exceed RFI reference levels are boxed. A blank cell indicates analysis was not performed or the result was rejected during validation.

Boxed Cell Standard: RFI1CSOI

Table 3: Summary of Existing Sample Results - OA 16 Constituents of Concern

Constituent	Station ID:	SB-10403	SB-10404	SB-10404	SB-10404	SB-10405	SB-10405
	Sample ID:	W20-SB-10403-0105	W20-SB-10404-0015	W20-SB-10404-0065	W20-SB-10404-0105	W20-SB-10405-0015	W20-SB-10405-0065
Depth (feet bgs):		10.5 to N/A	1.5 to N/A	6.5 to N/A	10.5 to N/A	1.5 to N/A	6.5 to N/A
Benzo(g,h,i)perylene							
Total HPAH							
Pesticides/PCBs (ug/kg)							
Aroclor 1248							
Aroclor 1254							
Aroclor 1260							
Aroclor 1016/1242							
Total PCB							
Inorganics (Total) (mg/kg)							
Aluminum		10300.00	9420.00	11600.00	9710.00	9990.00	17300.00
Antimony		6.00 UJ	5.00 UJ	7.00 UJ	7.00 UJ	5.00 UJ	7.00 UJ
Arsenic		6.00 U	5.00 U	7.00 U	7.00 U	5.00 U	7.00
Barium		30.50	21.50	26.40	33.40	23.60	46.30
Beryllium		0.10 U	0.10	0.20	0.10 U	0.10	0.30
Cadmium		0.30 U	0.20 U	0.30 U	0.30 U	0.20 U	0.30 U
Calcium		4520.00	4660.00	5560.00	4380.00	5220.00	6990.00
Chromium		13.30	19.50	12.90	10.60	12.10	20.50
Cobalt		4.40	3.30	4.20	4.20	3.60	7.00
Copper		10.40	7.50	10.40	9.20	9.00	26.30
Cyanide							
Iron		13000.00	10100.00	11700.00	13000.00	11100.00	20800.00
Lead		4.00	3.00	5.00	3.00	3.00	14.00
Magnesium		2070.00	1890.00	2240.00	2050.00	2040.00	4030.00
Manganese		122.00	86.90	96.60	121.00	94.80	169.00
Mercury		0.05 U	0.05 U	0.06 U	0.07 U	0.05 U	0.09
Nickel		9.00	7.00	9.00	8.00	8.00	16.00

Detected values which exceed RFI reference levels are boxed. A blank cell indicates analysis was not performed or the result was rejected during validation.

Boxed Cell Standard: RFI1CSOI

Table 3: Summary of Existing Sample Results - OA 16 Constituents of Concern

Station ID:		SB-10403	SB-10404	SB-10404	SB-10404	SB-10405	SB-10405
Sample ID:		W20-SB-10403-0105	W20-SB-10404-0015	W20-SB-10404-0065	W20-SB-10404-0105	W20-SB-10405-0015	W20-SB-10405-0065
Constituent	Depth (feet bgs):	10.5 to N/A	1.5 to N/A	6.5 to N/A	10.5 to N/A	1.5 to N/A	6.5 to N/A
Potassium		670.00	610.00	860.00	640.00	730.00	1490.00
Selenium		6.00 U	5.00 U	7.00 U	7.00 U	5.00 U	7.00 U
Silver		0.40 U	0.30 U	0.40 U	0.40 U	0.30 U	0.40 U
Sodium		979.00	919.00	1140.00	983.00	984.00	1260.00
Thallium		6.00 U	5.00 U	7.00 U	7.00 U	5.00 U	7.00 U
Vanadium		46.40	35.80	41.00	39.40	41.10	53.60
Zinc		24.70	20.40	24.00	22.60	24.90	44.40

Detected values which exceed RFI reference levels are boxed. A blank cell indicates analysis was not performed or the result was rejected during validation.

Boxed Cell Standard: RFI1CSOI

Table 3: Summary of Existing Sample Results - OA 16 Constituents of Concern

Constituent	Station ID:	SB-10405	SB-10405
	Sample ID:	W20-SB-10405-0105	W20-SB-10405-1015
Depth (feet bgs):		10.5 to N/A	1.5 to N/A
Volatile Organic Compounds (ug/kg)			
1,1,1-Trichloroethane			
1,1,2,2-Tetrachloroethane			
1,1,2-Trichloroethane			
1,1,2-Trichlorotrifluoroethane			
1,1-Dichloroethane			
1,1-Dichloroethene			
1,2-Dichloroethane			
1,2-Dichloropropane			
2-Butanone			
2-Chloroethylvinylether			
2-Hexanone			
4-Methyl-2-Pentanone			
Acetone			
Benzene			
Bromodichloromethane			
Bromoform			
Bromomethane			
Carbon Disulfide			
Carbon Tetrachloride			
Chlorobenzene			
Chloroethane			
Chloroform			
Chloromethane			
cis-1,2-Dichloroethene			
cis-1,3-Dichloropropene			

Detected values which exceed RFI reference levels are boxed. A blank cell indicates analysis was not performed or the result was rejected during validation.

Boxed Cell Standard: RFI1CSOI

Table 3: Summary of Existing Sample Results - OA 16 Constituents of Concern

Constituent	Station ID:	SB-10405	SB-10405
	Sample ID:	W20-SB-10405-0105	W20-SB-10405-1015
Depth (feet bgs):		10.5 to N/A	1.5 to N/A
Dibromochloromethane			
Ethylbenzene			
Methylene Chloride			
Styrene			
Tetrachloroethene			
Toluene			
Total Xylene			
trans-1,2-Dichloroethene			
trans-1,3-Dichloropropene			
Trichloroethene			
Trichlorofluoromethane			
Vinyl Acetate			
Vinyl Chloride			
Semi-Volatile Organic Compounds (ug/kg)			
1,2,4-Trichlorobenzene			
1,2-Dichlorobenzene			
1,3-Dichlorobenzene			
1,4-Dichlorobenzene			
2,2'-Oxybis(1-Chloropropane)			
2,4,5-Trichlorophenol			
2,4,6-Trichlorophenol			
2,4-Dichlorophenol			
2,4-Dimethylphenol			
2,4-Dinitrophenol			
2,4-Dinitrotoluene			
2,6-Dinitrotoluene			

Detected values which exceed RFI reference levels are boxed. A blank cell indicates analysis was not performed or the result was rejected during validation.

Boxed Cell Standard: RFI1CSOI

Table 3: Summary of Existing Sample Results - OA 16 Constituents of Concern

Constituent	Station ID:	SB-10405	SB-10405
	Sample ID:	W20-SB-10405-0105	W20-SB-10405-1015
Depth (feet bgs):		10.5 to N/A	1.5 to N/A
2-Chloronaphthalene			
2-Chlorophenol			
2-Methylnaphthalene			
2-Methylphenol			
2-Nitroaniline			
2-Nitrophenol			
3,3'-Dichlorobenzidine			
3-Nitroaniline			
4,6-Dinitro-2-methylphenol			
4-Bromophenyl-phenylether			
4-Chloro-3-methylphenol			
4-Chloroaniline			
4-Chlorophenyl-phenylether			
4-Methylphenol			
4-Nitroaniline			
4-Nitrophenol			
Benzoic acid			
Benzyl alcohol			
bis(2-Chloroethoxy)methane			
bis(2-Chloroethyl)ether			
bis(2-Ethylhexyl)phthalate			
Butylbenzylphthalate			
Carbazole			
Di-n-butylphthalate			
Di-n-octylphthalate			
Dibenzofuran			
Diethylphthalate			

Detected values which exceed RFI reference levels are boxed. A blank cell indicates analysis was not performed or the result was rejected during validation.

Boxed Cell Standard: RFI1CSOI

Table 3: Summary of Existing Sample Results - OA 16 Constituents of Concern

Constituent	Station ID:	SB-10405	SB-10405
	Sample ID:	W20-SB-10405-0105	W20-SB-10405-1015
Depth (feet bgs):		10.5 to N/A	1.5 to N/A
Dimethylphthalate			
Hexachlorobenzene			
Hexachlorobutadiene			
Hexachlorocyclopentadiene			
Hexachloroethane			
Isophorone			
N-Nitroso-di-n-propylamine			
N-Nitrosodiphenylamine			
Nitrobenzene			
Pentachlorophenol			
Phenol			
Naphthalene			
Acenaphthylene			
Acenaphthene			
Fluorene			
Phenanthrene			
Anthracene			
Total LPAH			
Fluoranthene			
Pyrene			
Benzo(a)anthracene			
Chrysene			
Benzo(b)fluoranthene			
Benzo(k)fluoranthene			
Benzo(a)pyrene			
Indeno(1,2,3-cd)pyrene			
Dibenz(a,h)anthracene			

Detected values which exceed RFI reference levels are boxed. A blank cell indicates analysis was not performed or the result was rejected during validation.

Boxed Cell Standard: RFI1CSOI

Table 3: Summary of Existing Sample Results - OA 16 Constituents of Concern

Constituent	Station ID:	SB-10405	SB-10405
	Sample ID:	W20-SB-10405-0105	W20-SB-10405-1015
Depth (feet bgs):		10.5 to N/A	1.5 to N/A
Benzo(g,h,i)perylene			
Total HPAH			
Pesticides/PCBs (ug/kg)			
Aroclor 1248			
Aroclor 1254			
Aroclor 1260			
Aroclor 1016/1242			
Total PCB			
Inorganics (Total) (mg/kg)			
Aluminum		20600.00	9870.00
Antimony		7.00 UJ	5.00 UJ
Arsenic		7.00 U	5.00 U
Barium		81.90	24.10
Beryllium		0.40	0.20
Cadmium		0.30 U	0.20 U
Calcium		5580.00	5430.00
Chromium		19.20	12.70
Cobalt		8.70	3.50
Copper		25.40	11.60
Cyanide			
Iron		20700.00	10900.00
Lead		6.00	3.00
Magnesium		4090.00	2010.00
Manganese		417.00	92.90
Mercury		0.06 U	0.05 U
Nickel		15.00	9.00

Detected values which exceed RFI reference levels are boxed. A blank cell indicates analysis was not performed or the result was rejected during validation.

Boxed Cell Standard: RFI1CSOI

Table 3: Summary of Existing Sample Results - OA 16 Constituents of Concern

Constituent	Station ID:	SB-10405	SB-10405
	Sample ID:	W20-SB-10405-0105	W20-SB-10405-1015
	Depth (feet bgs):	10.5 to N/A	1.5 to N/A
Potassium		1300.00	710.00
Selenium		7.00 U	5.00 U
Silver		0.40 U	0.30 U
Sodium		1350.00	994.00
Thallium		7.00 U	5.00 U
Vanadium		58.40	40.60
Zinc		39.30	24.00

Detected values which exceed RFI reference levels are boxed. A blank cell indicates analysis was not performed or the result was rejected during validation.

Boxed Cell Standard: RFI1CSOI

APPENDIX B
CONFIRMATORY SAMPLING PLAN

APPENDIX B
SWMU 2-87.65, 77, 78.B, AND OA 16
CONFIRMATORY SAMPLING PLAN

BOEING—PLANT 2
SEATTLE, WASHINGTON

B.1 INTRODUCTION

This Field Sampling Plan (FSP) has been prepared in accordance with WAC 173-340-820 as a field guide for conducting soil sampling in support of the remedial actions at the former Solid Waste Management Units (SWMU) 2-87.65, 77, 78.B, and OA 16. The plan covers:

- Confirmatory soil sampling to verify cleanup has been achieved.

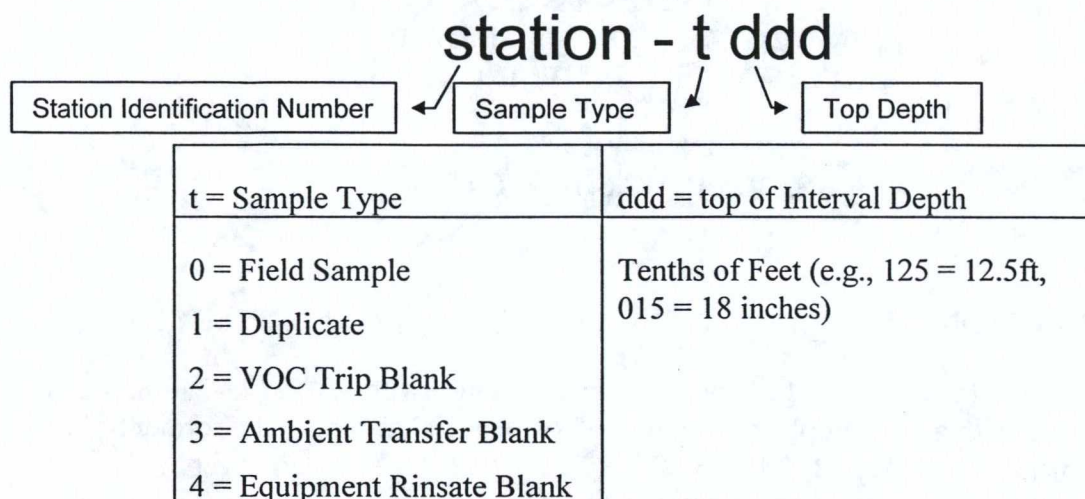
Field procedures are described in Section 2 of this plan. Section 3 describes the methodology.

B.2 PROCEDURES

The procedures to be followed are designed to ensure that the resulting data are representative of conditions in the field, capable of supporting sound remedial decisions, and legally defensible. Samples will be assigned a sample designator as outlined in Section B.2.1, sample stations will be located as provided in Section B.2.2, field and sampling equipment will be decontaminated before and during use as indicated in Section B.2.3, samples will be handled as provided in Section B.2.4 and field activities will be documented per Section B.2.10. Field quality control (QC) and waste management are covered in Sections B.2.11 and B.2.12, respectively.

B.2.1 Sample Designation

For tracking and data management, samples will be assigned a unique 20-character alphanumeric identifier according to the method described in this section. The numbering system will be used to identify each sample collected; to facilitate tracking, retrieval, and data processing; and to maintain relationships between samples. The sample designation scheme is illustrated as follows and defined in the following table.



Each sample number consists of two components separated by a dash (-) that correspond to the location identification and sample type/depth, as described below:

Station —A five-character alphanumeric designation to identify the geographic sample location and station number according to the project area sampling station map:

SB - Soil Boring

Sample Type/Depth —A four-character numeric designation, consisting of a number to indicate sample type:

0###	-	Field sample (No QA/QC)
1###	-	Field duplicate
2###	-	VOC trip blank
3###	-	Ambient field blank
4###	-	Equipment rinsate blank

and a three-character field to indicate sample depth in tenths of feet:

#010	-	1 foot
#050	-	5 feet
#125	-	12.5 feet

Sample depth determinations will be made to the nearest 0.5 foot. The three-character field is a component of the four-character numeric designation.

If a sample is not being collected for QA/QC purposes and does not have an associated depth (e.g., surface soil sample, groundwater sample), the characters of the third component will default to "0000." The third component will be retained in order to accommodate a field duplicate sample.

VOC trip blanks (2####), ambient field blanks (3####), and equipment rinsate blanks (4####) present a unique situation as they are not associated with a sampling depth, nor are they necessarily the same matrix for which they are being collected. Instead of depth, the last three characters of the fourth component will be sequentially numbered, as in the examples below:

Under the sample designation method described above, the identifier will be unique (i.e., no two samples will have the same one), and informative (i.e., will show sampling round, method of collection, location, sample type, and depth interval).

If the data will be entered into an existing database, the sample numbering scheme will be consistent with the existing data. In any event, it will be unique to each sample. This designation scheme will facilitate data management and tracking during the evaluation and reduction of data.

B.2.2 Sample Positioning

Sample coordinates will be surveyed or measured with a graduated tape from a known reference, as appropriate.

B.2.3 Sampling Equipment Decontamination

Soil sampling equipment will be decontaminated between sampling points to prevent contamination of clean areas, to prevent cross-contamination between sampling areas, and to assist in maintaining the health and safety of field personnel and the general public.

Dedicated or disposable sampling equipment will be used where feasible to reduce the possibility of sample cross-contamination. The majority of the sampling equipment will be decontaminated in the field. Equipment that cannot be effectively decontaminated will be disposed of after each sampling event.

The following is a partial list of sampling equipment that will be decontaminated in the field:

- Stainless-steel trowels or sampling spoons
- Stainless-steel mixing bowls
- Stainless-steel hand augers
- Shovels
- Split-spoon samplers
- Decontamination will consist of the following steps:
 - Liquinox[™] detergent wash
 - Tap water rinse
 - Distilled, carbon-free water rinse

Air dry, away from potential sources of contamination (e.g., splashes, airborne particulates)

B.2.4 Sample Handling

Sample containers will be labeled with the required information on the label. Each label will include the information in Section A.2.7 written in indelible ink. Labels will be affixed to the sample containers in a manner so as to prevent separation of the label from the container. The sample will be preserved as required. Sample chain-of-custody procedures outlined in Section A.2.7 will be observed. Samples will be packaged and prepared for shipping in a manner that will prevent damage.

B.2.5 Sample Preservation and Holding Times

Samples will be preserved as described in specific analytical procedures presented in EPA methods for analysis of solid wastes (EPA 1986a), or water and wastes (EPA 1986b).

B.2.6 Sample Containers

All sample containers will be precleaned following the requirements in EPA guidance documents (EPA 1989).

Container requirements vary according to analyte, sample matrix, and hazard classification. It is anticipated that all samples collected for the project will be low hazard.

B.2.7 Sample Custody

Custody procedures will be performed to provide a documented, legally defensible record that can be used to follow the possession and handling of a sample from collection through analysis. A sample is in custody if it meets at least one of the following conditions:

- Is in someone's physical possession or view
- Is secured to prevent tampering
- Is secured in an area restricted to authorized personnel

Sample control and chain-of-custody procedures in the field and during shipment will be performed in accordance with the procedures in the CLP Sampler's Guide (EPA 1990).

Except as noted below, sample containers will be labeled at the time of sampling with the following information:

- Sample number
- Sampling date
- Time
- Analyses required
- Preservation, if any
- Person sampling

When sample spillage during collection may obscure the sample labels, the label will be affixed immediately after sample collection but prior to collection of another sample. A chain-of-custody record will be completed for each container of samples (cooler) at the end of each day of sampling. Custody seals will be placed on each cooler or package containing samples so that the package cannot be opened without breaking the custody seals. The completed chain-of-custody forms will be delivered to the recipient laboratory with the respective samples.

The sample custodian at each laboratory will verify that the package custody seals are unbroken. The accompanying chain-of-custody records will be properly signed upon receipt of the samples by the sample custodian. Any questions or observations concerning sample integrity will be noted.

B.2.8 Shipping Requirements

Shipping and handling of samples will be done in a manner that protects both the sample integrity and shipment handlers from the possible hazardous nature of samples. All samples will be hand delivered by a WESTON representative to Analytical Resources, Inc., of Seattle, WA, or other laboratory services, as appropriate. Packaging, marking, labeling, and shipping of samples will comply with all applicable regulations promulgated by the U.S. Department of Transportation (DOT) in the Code of Federal Regulations (49 CFR 171-177).

B.2.9 Laboratory Coordination

Sample shipments, data packages, data validation, and document control will be performed as part of sample management. All scheduling for sample containers, analytical work, and data dispersal will be arranged in close conjunction with the laboratory. The following items will be completed:

- Review the number of samples to be submitted for analysis.
- Review the analytical requirements, number and type of containers needed, blanks requirements, and volumes required.
- Coordinate special analytical requirements with the laboratory QA manager.
- Inform the laboratory of the approximate dates of sampling.
- Schedule shipment of sample containers, labels, chain-of-custody forms.
- Inform the laboratory of the need for analytical results in both hardcopy and electronic formats.
- Scheduling oversight will be conducted by the project chemist.

B.2.10 Documentation

- All field activities will be documented in standard field forms. The following information will be recorded.
- Date and time of entry (24-hour clock)

- Task/activity identification
- Location
- Field measurements
- Weather conditions
- Deviations from the FSP
- Field observations
- Signature of person making entries
- Methods of sample collection and preservation

Additional minimum documentation required for a given investigation (e.g., boring logs, field data sheets) will be completed as required

B.2.11 Quality Assurance/Quality Control Samples

Field QA/QC samples will not be collected though laboratory QC samples including method blanks, laboratory duplicate analysis, and matrix spike sample analysis will be analyzed.

B.2.12 Waste Management

All contaminated or potentially contaminated materials generated will be managed by Boeing.

B.2.13 Confirmatory Sampling

Confirmatory soil sampling will be performed after the removal action to verify remaining concentrations. Samples from the bottom and sides of the excavation will be submitted to the laboratory for analysis of parameters which exceeded criteria in the initial sampling round. The number of samples to be collected is discussed shown below.

Confirmatory Samples

SWMU	Analytes	Number of Bottom Samples	Number of Sidewall Samples	Comments
SWMU 2-87.65	TPH PCB	2	3	Two bottom samples spaced equidistant down the center. One sample from each sidewall
SWMU 77	PCB	1	4	Two bottom samples spaced equidistant down the center. One sample from each sidewall
SWMU 78.B	TPH PCB	1	4	One bottom sample in the center. One sample from each sidewall
OA 16	Cadmium Chromium Copper Mercury bis(2-Ethylhexyl)phthalate	1	4	One bottom sample in the center. One sample from each sidewall

Discrete side wall and bottom samples will be collected. Sidewall samples will be collected from the middle of the side wall at an elevation one-half the distance from the excavation bottom to ground surface. Bottom samples will be collected equidistant along the bottom centerline.

B.2.14 Laboratory Analytical Methods

Chemical Analysis

Chemical analysis will be performed by Analytical Resources, Incorporated (ARI). ARI is located at 333 Ninth Avenue North, Seattle, Washington 98109-5187. The laboratory project manager/contact for the interim action is Jeff Reiten (phone: 206-621-6490).

ARI is a full-service chemical analytical laboratory participating in the State of Washington Department of Ecology Environmental Laboratory Accreditation Program. ARI and its staff have special expertise in the analysis of various complex matrices for organic and inorganic parameters. Staff have participated in the development and review of organic methods found in the Puget Sound Estuary Protocol (PSEP) guidance. Project experience is demonstrated by participation in the EPA Contact Laboratory Program (CLP), Puget Sound Remedial Investigations and Feasibility Studies supporting the Comprehensive Environmental Response, Compensation, and Liabilities Act of 1980 (CERCLA[Superfund]) activities, and Puget Sound Dredged Disposal Analysis (PSDDA) monitoring projects.

Soil samples collected from SWMU 2-41.33 will be analyzed in accordance to *Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods* (SW-846) (EPA 1986a) and *Methods for Chemical Analysis of Water and Wastes* (EPA 1986b). The list of analytes for each analytical method and the expected detection limits are presented below.

**Analytical Methods, Parameters,
and Quantitation Limits for Soil Samples**

Parameters	Analytical Methods Soil	Quantitation Limits—Soil (mg/kg, wet weight)
Inorganics		
Cadmium	EPA 6010	0.6
Chromium	EPA 6010	1.5
Copper	EPA 6010	0.6
Lead	EPA 6010	6.0
Mercury	EPA 7471A	0.05
Organics		
bis(2-Ethylhexyl)phthalate	EPA 8270C	0.020
PCBs	EPA 8082 Mod.	0.010
TPH (oil and diesel)	NWTPH-Dx	100

B.3 LABORATORY DELIVERABLES AND DATA VALIDATION

A laboratory data package will be submitted to WESTON for each analytical batch. Data deliverables will include:

- Copy of chain-of-custody forms for all samples included in the analytical batch.
- Tabulated sample analytical results with units, data qualifiers, percent solids, sample weight or volume, dilution factor, laboratory batch and sample number, WESTON sample number, and dates sampled, received, extracted, and analyzed all clearly specified. Surrogate percent recoveries will be included for organic analyses.
- Blank summary results indicating samples associated with each blank.
- Matrix spike/matrix spike duplicates result summaries with calculated percent recovery and relative percent differences.
- Laboratory control sample results, when performed, with calculated percent recovery.

In order to ensure that data is of a known and acceptable quality, 100 percent of all analytical data generated for the interim action will undergo a Level I quality review. Raw data (instrument tuning, calibrations, chromatograms, spectra, bench sheets, etc.) will remain on file at the laboratory and will not be routinely examined.

Level I QC Review

Level I data review is a review of data precision and accuracy using quality control summary sheet results provided by the laboratory for each data package. Level I review is based on the same quality control criteria as the more extensive Level II review, except raw data (instrument tuning, calibrations, chromatograms, spectra, instrument printouts, bench sheets and laboratory worksheets) are not reviewed. If outliers occur during calibration or calibration verification, the laboratory will note the incident in the data narrative and professional judgment will be used to determine any necessary actions if any. The following is an outline of a Level I review:

- Verify sample numbers and analyses match the chain-of-custody request.
- Verify sample preservation and holding times.
- Verify that field and laboratory blanks were performed at the proper frequency and that no analytes were present in the blanks.
- Verify field and laboratory duplicates, matrix spikes, and laboratory control samples were run at the proper frequency and that control limits were met.
- Verify surrogate compound analyses have been performed and that results met the QC criteria.
- Verify required limits of detection limits have been achieved.

B.4 REFERENCES

EPA (U.S. Environmental Protection Agency). 1990. Contract Laboratory Program Sampler's Guide

EPA. 1989. Specifications and Guidance for the Preparation of Contaminant-Free Sample Containers. Office of Emergency and Remedial Response. 9240.0-05. July.

EPA. 1986a. Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods (SW-846).

EPA. 1986b. Methods for Chemical Analysis of Water and Wastes. EPA-600/4-79-020.

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**SWMU 2-87.65 MACHINE PIT,
SWMU 77 PCB RETENTION TANK,
SWMU 78.B OIL/WATER SEPARATOR, AND OA 16
FORMER HAZARDOUS WASTE STORAGE
FACILITY
INTERIM MEASURES WORK PLAN**

**BOEING—PLANT 2
SEATTLE/TUKWILA, WASHINGTON**

Prepared for
The Boeing Company

December 1998

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**SWMU 2-87.65 MACHINE PIT,
SWMU 77 PCB RETENTION TANK,
SWMU 78.B OIL/WATER SEPARATOR,
AND OA 16 FORMER HAZARDOUS WASTE STORAGE FACILITY
INTERIM MEASURES WORK PLAN**

**BOEING—PLANT 2
SEATTLE, WASHINGTON**

1. INTRODUCTION

This plan describes the proposed scope of work to accomplish interim measures (IMs) at the SWMU 2-87.65 (Machine Pit), SWMU 77 (PCB Retention Tank), SWMU 78.B (Oil/Water Separator), and OA 16 (Former Hazardous Waste Storage Facility) located at Boeing Plant 2. This work is being done prior to completion of the Corrective Measures Study (CMS) in order to support redevelopment of the area where Building 2-87 now sits.

This scope of work focuses on soil cleanup only to support building construction in the area where the solid waste management units (SWMUs) and other area (OA) exist. Groundwater remediation is not addressed in this IM work plan. Groundwater remediation, if required, will be addressed during completion of the CMS.

This Interim Measures Work Plan has been prepared to comply with the requirements of the Administrative Order on Consent (Order) issued by the U.S. Environmental Protection Agency (EPA) to The Boeing Company (Boeing) under the authority of Section 3008(h) of the Resource Conservation and Recovery Act of 1976 (RCRA), as amended, 42 USC 6928(h). This Order [RCRA Docket No 1092-01-22-3008(h)] became effective on 18 January 1994.

2. SWMU/AOC/OA DESCRIPTION

The 2-87.65 machine pit was a reinforced concrete trench approximately 3 feet wide by 2.5 feet deep by 26 feet long. The trench has a floor drain and trap in the center. The trench was used to collect oil that dripped from machinery.

SWMU 77 served as secondary containment for PCB-containing transformer oil. The containment was for electrical transformers and consisted of a bermed concrete area. The containment area was connected to an underground storage tank (UST) via piping. The tank and piping have been removed. SWMU 77 is located approximately 50 feet southwest of Cistern 4 (SWMU 79). SWMU 77 consists of three areas. Reference to SWMU 77 within this document refers to the area located north of Building 2-110.

SWMU 78.B is an oil/water separator that collects stormwater runoff to remove oil. Oil from the separator is regularly pumped out and shipped off-site for disposal. SWMU 78.B is located on the south side of Building 2-87.

OA 16 is a former RCRA container storage area (Building 2-104 TSD) that has gone through aboveground closure (WESTON 1994). The former container storage area has since been used for covered parking.

Figure 1 shows the location of these SWMUs.

3. BACKGROUND

3.1 Summary of Nature and Extent

Constituents of concern (CoCs) determined in WESTON 1997 for SWMU 2-87.65 are volatile organic compounds (VOCs), base neutral acids (BNAs), polychlorinated biphenyls (PCBs), inorganics, and total petroleum hydrocarbon (TPH).

CoCs for SWMU 78.B are TPH. CoCs are defined as constituents that may have been released from the unit based on the historical use of the unit. Twelve locations were sampled near the 2-87.65 machine pit and 78.B oil/water separator for soil CoCs. Low concentrations of metals and elevated concentrations of PCBs were found in the immediate vicinity of these SWMUs. CoC for SWMU 77 consisted of PCBs and TPH. Soil samples were collected from six locations around SWMU 77. Soil samples were analyzed for metals, PCBs and total petroleum hydrocarbon. Low concentrations of metals were detected in the soil samples. No PCBs or TPH was detected.

CoCs for OA16 include VOCs, BNAs, PCBs, and inorganics. WESTON conducted near-surface and subsurface soil sampling during closure of the aboveground portion of OA 16 (WESTON 1994). Two samples were collected from near-surface soils immediately beneath the concrete pad of the easternmost storage cell; two samples were collected from depths of 8 to 10 feet below ground surface (bgs) near the same locations. In total, thirteen VOC constituents, two BNA constituents, and twelve metals were detected in one or more of the four samples. Cadmium and copper were detected in both of the near-surface soil samples at elevated concentrations.

Additional soil sampling was conducted at OA 16 based on the exceedances of RFI reference levels for soils reported during the aboveground closure. In total, nine (plus one duplicate) soil samples were collected from three soil borings surrounding the previous soil sampling locations. No metals were detected above RFI reference levels in any of the samples from the later three borings, indicating that the extent of releases to soil from OA 16 were very limited in area. A detailed description of the SWMUs/OAs and their soil quality can be found in WESTON 1998. Appendix A contains a detailed listing of the laboratory analytical information. Soil sampling dates can be found in WESTON 1998.

3.2 Rationale for Interim Measures

Boeing desires to complete these IMs in order to allow facility redevelopment in the area where these units now exist. Removal of soil as IMs will allow redevelopment with the intent of preventing any future soil removal under the new building to be constructed in the area.

Site conditions and data indicate the soil currently presents no immediate risk to human health or the environment.

4. INTERIM MEASURES OBJECTIVES

The objectives of these IMs are to:

- Allow construction of new structures and remove soil to the extent that no potential future risks to human health or the environment above accepted guidelines is likely given the proposed use of the facility.
- Complete the interim measures in anticipation of a final remedy consistent with the outcome of a CMS evaluation of constituents present.
- Remove impacted soil such that no short-term risks occur to workers during construction of the new facility.

Meeting the objectives above will be determined by the degree to which the proposed action meets cleanup goals (defined later in this work plan).

5. PROJECT PARTICIPANTS AND RESPONSIBILITIES

Three primary participants are anticipated in the performance of this project, including: (1) The Boeing Company, (2) Roy F. Weston, Inc., and (3) An Interim Measure construction subcontractor. The responsibilities of these participants are as follows:

The Boeing Company

Boeing's responsibilities include project direction and oversight, site security, integration of the interim measures with ongoing facility operations, disposal of hazardous wastes, personnel access badges, space allocation, site usage, and other miscellaneous support items associated with planning and performance of the work.

Roy F. Weston, Inc.

WESTON's responsibilities will be to prepare the work plan, ensure project safety, subcontractor management, and construction oversight. WESTON will also perform confirmatory

sampling of the remaining soil upon completion of removal. WESTON will prepare the final interim action completion report.

Interim Measure Construction Subcontractor

The interim action construction subcontractor will be responsible for site preparation, soil excavation, truck/roll-off loading, backfill provisions, worker health and safety monitoring, equipment decontamination, exclusion zones, decontamination stations, tarping truck/roll-offs, spill protection, and general labor. The interim action construction subcontractor will report directly to WESTON's on-site construction manager.

An overall organization chart is shown in Figure 2.

6. SCOPE OF WORK (PLANS AND SPECIFICATIONS)

6.1 Health And Safety Plan (HASP)

An OSHA/WISHA-compliant HASP covering all personnel will be prepared. A HASP will be prepared by the interim measure construction subcontractor. The HASP will address protective equipment, a task-by-task risk analysis, safety procedures, and training.

It is anticipated that the work will be performed in modified Level-D personal protective equipment (PPE). This includes the following equipment:

- Hard hats
- Safety glasses
- Steel-toed boots/leather steel-toed work boots
- Tyvek coveralls
- Work gloves

6.2 Mobilization

An exclusion zone will be set up around each work area. Level-D PPE will be required within the exclusion zone. A small decontamination station will be set up adjacent to the exclusion zone which will include PPE, a decontamination tub, brushes, a disposal bin for used PPE, a first aid kit, and other supplies.

6.3 Soil Removal

Limits of excavation will be marked. Preliminary soil removal limits for SWMU 2-87.65, SWMU 77, SWMU 78.B, and OA 16 are shown in Figures 3, 4, and 5. Figures 3, 4, and 5 also show a summary of the maximum constituent concentrations in the soil above the water table (estimated at 10 feet bgs).

The excavation limits were determined based on the estimate of vadose zone soil exceeding the soil cleanup goals listed in Table 1. Table 1 lists the constituents that exceed 100 times Washington State Department of Ecology Model Toxics Control Act (MTCA) Method B surface water criteria. Cleanup goals for PCBs are to achieve nondetectable concentrations using EPA Method 8082. Any impacted soil below the water table will be addressed in the Corrective Measures Study as groundwater remedies.

Soil will be removed using a small excavator or backhoe. Soil will be excavated until the limits of excavation shown in Figures 3, 4, and 5 are reached consistent with Section 6.4. The bottom and sidewalls of the excavation will then be sampled. If confirmatory sampling indicates the cleanup goals are not met, additional excavation will be performed as practical and the newly excavated area re-sampled.

SWMU 77 served as secondary containment for PCBs. No PCBs were detected in soil near this SWMU. However, chrome was detected above performance objectives. Since chrome was not handled in this SWMU, the presence of chrome is believed to be from Cistern 4. Therefore, the limits of excavation for SWMU 77 will be based on its physical features. Chrome exceedances to the north of SWMU 77 will be further investigated during interim measure activities planned for Cistern 4.

Soil removal will proceed to a depth no deeper than groundwater. Soil contaminants below the water table will be addressed in the CMS as a groundwater remediation issue.

Soil will be kept moist as necessary to prevent dusting. Excavated soil will be loaded directly into dump trucks and taken to a stockpile area where it will be placed into a stockpile cell. The cell will consist of jersey barriers or equivalent arranged in a rectangular pattern lined with plastic. A separate stockpile cell will be constructed for each of the SWMUs to prevent comingling of contaminants. The soil stockpile cell will be covered at the end of each day to prevent run-on and runoff.

The area of excavation, depth and estimated volume for each of the units is shown in Table 2.

6.4 Confirmatory Soil Sampling

Post-excavation confirmatory sampling will occur after excavation limits have been reached. The purpose is to document conditions prior to backfill and/or direct additional excavation. These samples will be sent to an off-site laboratory for a quick turnaround. Depending on the rate of excavation, some of the confirmatory samples may be collected upon completing excavation of a portion of the area.

At SWMU 77, soil samples will also be collected in the area of the former tank and piping to characterize the soil remaining after the tank/piping removal. Four soil samples will be collected to characterize the condition of the soil. One discrete sample from the former bottom of the excavation, two discrete samples from opposite former sidewalls, and one discrete sample from the middle of the former pipe run will be collected.

Tables 3, 4, and 5 provide a listing of the confirmatory analyses to be performed on the soil samples. The analytes selected for confirmatory analyses are those pertinent constituents from Table 1 that exceeded the cleanup goals (i.e., 100 times MTCA Method B surface water criteria) for the SWMU/OA. In the case of SWMU 77, confirmatory analysis analytes will be PCBs only since chrome concentrations will be addressed as part of the Cistern 4 investigation.

IM cleanup goals are listed in Table 1. The excavation approach will be to remove soil to the preliminary defined limits and then sample the sidewalls and bottom. If the confirmatory samples exceed 10 times the Table 1 cleanup levels, additional excavation will be performed as practical. If the confirmatory samples are under 10 times the Table 1 cleanup goals, additional excavation in an attempt to meet the cleanup goals may be performed but will not be required. For SWMU 77, excavation to the north and east may be terminated at the limits shown on Figure 4 since impacted soil beyond these boundaries will be addressed as part of Cistern 4.

The sample density and spacing of confirmatory sampling program will depend upon the configuration of the excavated area. Details for confirmatory sampling are shown in Table 6.

Confirmatory sampling is discussed in more detail in Appendix B.

6.5 Decontamination

The hoe bucket and thumb will be the only equipment requiring decontamination. Decontamination will be performed first using dry methods (brush and rags) to remove gross contamination. Subsequent decontamination will be performed using a pressure washer and soap solution. The quantity of decontamination water generated will be kept to a minimum and is expected to be less than 10 gallons per SWMU. Decontamination water will be collected and placed in a temporary storage container prior to proper disposal. Decontamination brushes, PPE, and small quantities of other miscellaneous materials will be disposed with the soil.

6.6 Backfill

Backfill will be placed by an excavator or backhoe. Backfill will consist of a clean (i.e., noncontaminated) granular well compacted fill as specified by Boeing. Compaction requirements will be specified by Boeing.

6.7 Transportation and Disposal (T&D)

The soil stockpiles will be sampled and analyzed prior to disposal. The number of samples from each stockpile will depend upon the quantity of soil generated. Table 7 provides a listing of the number of soil samples based on stockpile size. Discrete samples of the stockpile will be collected.

Soil will be profiled and disposed in accordance with all applicable regulations. Manifests or bills of lading will be generated for all material disposed. Boeing will be responsible for disposal of all materials.

6.8 Demobilization

Demobilization will occur upon completion of the work. Demobilization will consist of removal of the exclusion zones, decontamination stations, portable equipment, and site cleanup. Areas that are visually observed to contain soil from the work will be cleaned as needed.

7. OPERATION AND MAINTENANCE

Because this is a removal action, no long- or short-term operation and maintenance requirements are required.

8. INTERIM MEASURES COMPLETION REPORT

An Interim Measures Post Completion Report will be prepared to document field work performed and conditions present at work completion. The completion report will include sketches of the final areas excavated, show confirmatory sample locations and the resultant analytical data, document field observations and provide an estimate of the soil quantity removed.

9. SCHEDULE

A proposed schedule for the work is shown in Figure 6.

10. INTERIM MEASURE CONSTRUCTION QUALITY ASSURANCE

Construction quality assurance requirements will be implemented and verified per the checklist provided in Table 8.

11. REPORTING REQUIREMENTS

Daily reports will be prepared in the field by the on-site construction engineer during each day work is performed. The reports will be prepared throughout the day and be completed for each day before the construction engineer leaves the site. The reports will be prepared on preprinted forms in ink. The reports will be maintained in a dry secure location. The daily reports will include the following information:

- Construction engineers name
- Date
- Weather (temperature, precipitation, other observations)
- Equipment on-site
- Personnel (contractors, visitors, agency)

- Work start and end time
- Work performed
- Testing/inspections performed
- Problems/issues
- Critical conversations/directions received or given
- Materials brought on-site
- Wastes/debris disposed off-site
- Other pertinent information (sketches, test data, unknown conditions, etc.)

Monthly status reports will be prepared by Boeing for submittal to EPA. Progress updates will be provided to the EPA as requested.

12. REFERENCES

WESTON (Roy F. Weston, Inc.). 1998. Comprehensive RCRA Facility Investigation, Boeing—Plant 2, Seattle/Tukwila, Washington. Prepared for The Boeing Company, Energy and Environmental Affairs, Seattle, WA. Roy F. Weston, Inc., Seattle, WA. August .

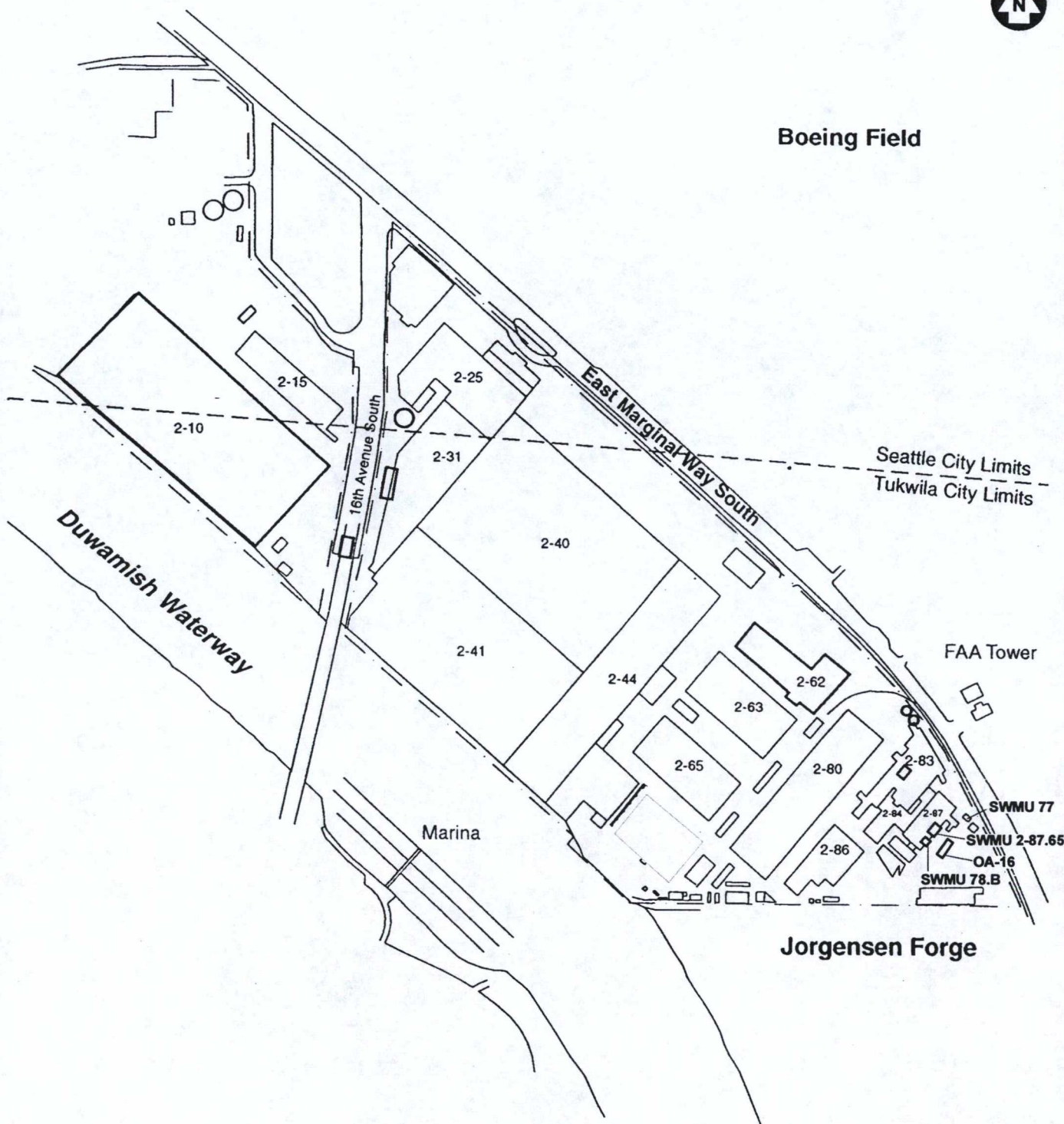
WESTON 1997. RFI Soil Investigation Interim Report. Prepared for The Boeing Company, Seattle, WA. August 1997.

WESTON. 1994. Closure Certification Report, TSD Areas 1, 2, and 3, Seattle/Tukwila, Washington. Prepared for The Boeing Company, Seattle, WA.

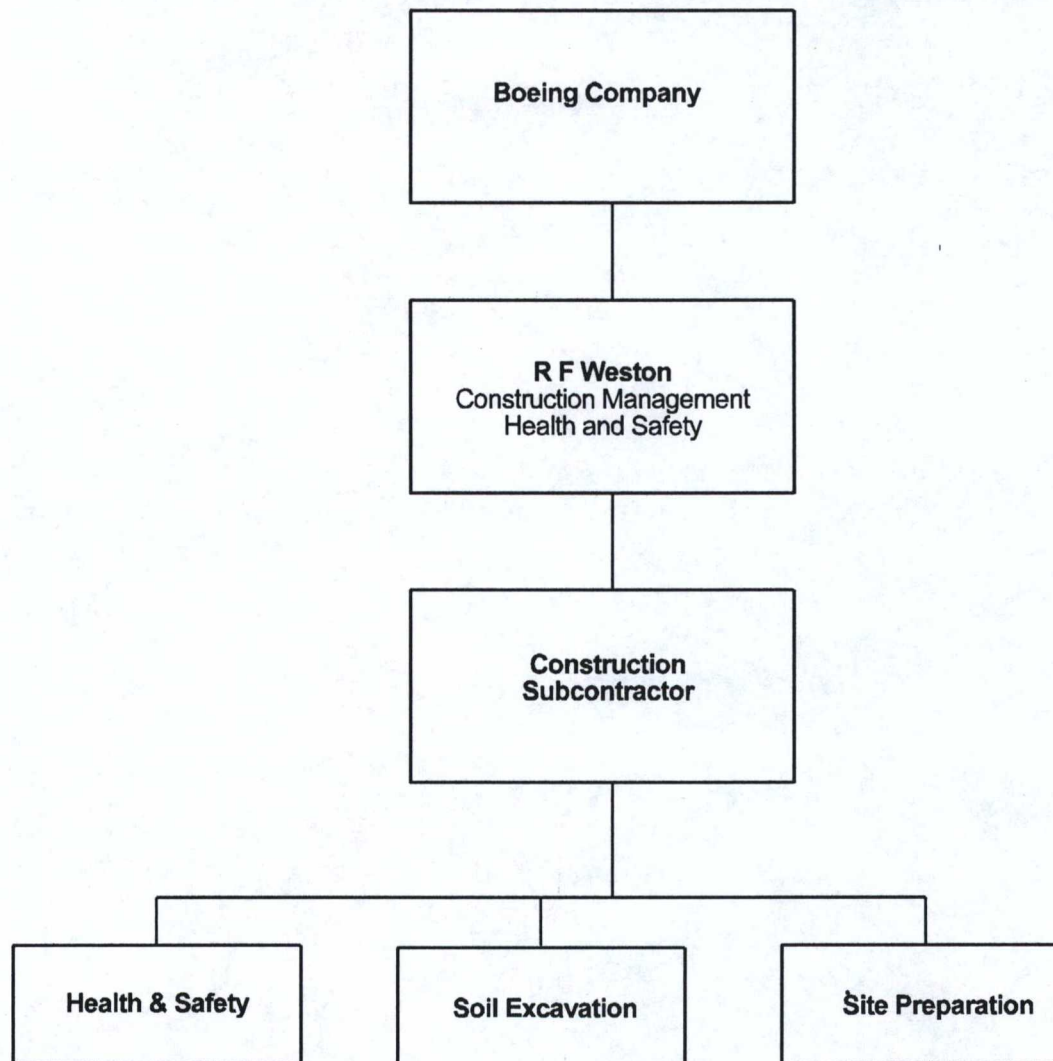
FIGURES



Boeing Field



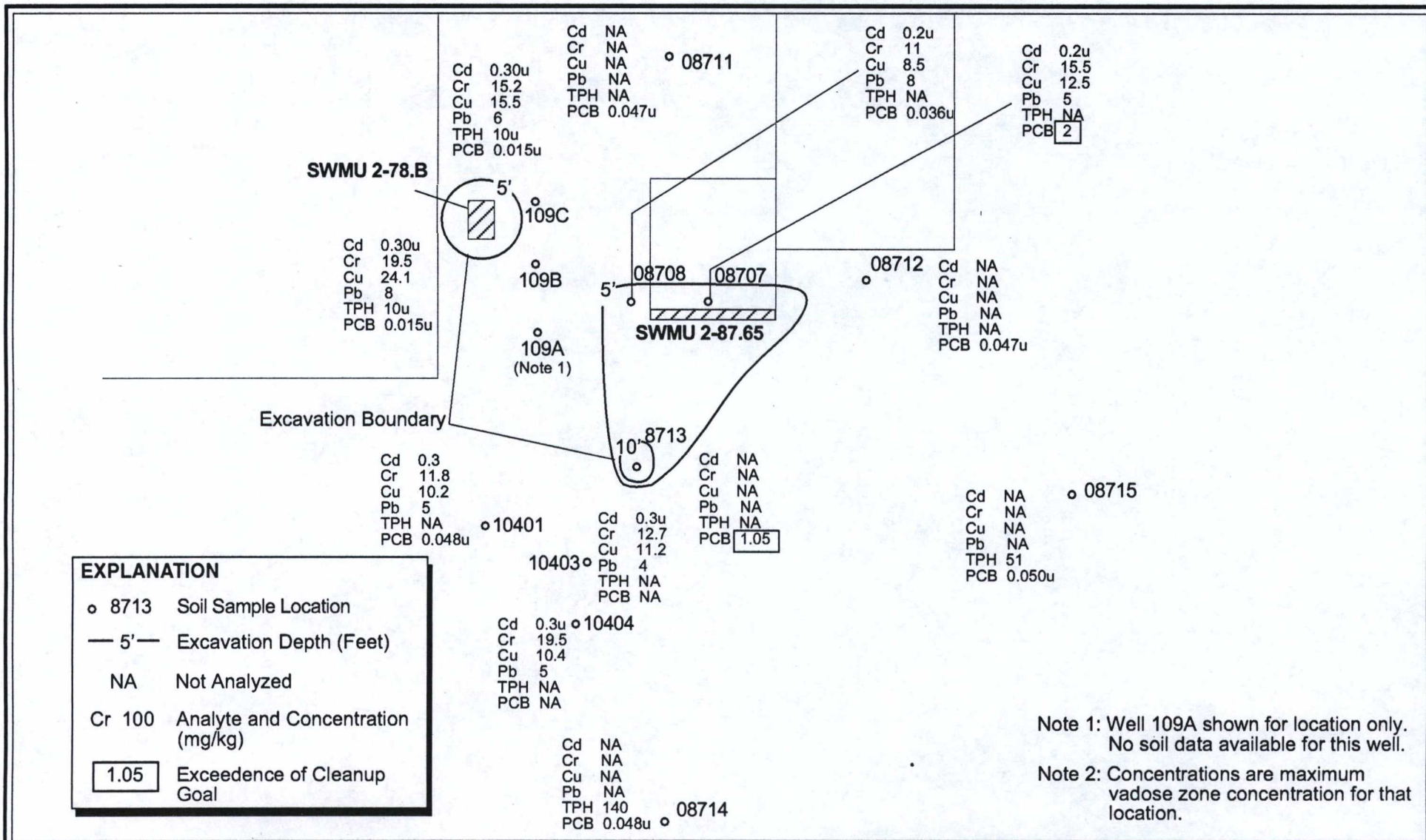
Facility Map



Organization Chart

FIGURE

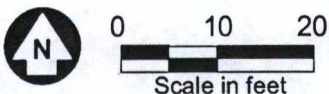
2



**SWMUs 2-87.65 and 78.B
Excavation Plan**

FIGURE

3



WESTON
MANAGERS DESIGNERS/CONSULTANTS

EXPLANATION

o11001 Soil Sample Location

—5'— Excavation Depth (Feet)

NA Not Analyzed

PCB 100 Analyze and Concentration
(mg/kg)



Exceedence of Cleanup
Goal

Building
2-87

o 08709
PCB 0.056u

o 08704
PCB 0.086u

08705
o PCB 0.096u

o 08706
PCB 0.087u

17'

13'

5'

Excavation Boundary

o 11001
SWMU 77 PCB 0.090u

o 08712
PCB 0.047u

Building
2-110

Note: Concentrations are maximum vadose
zone concentration for that location.



0 10 20
Scale in feet

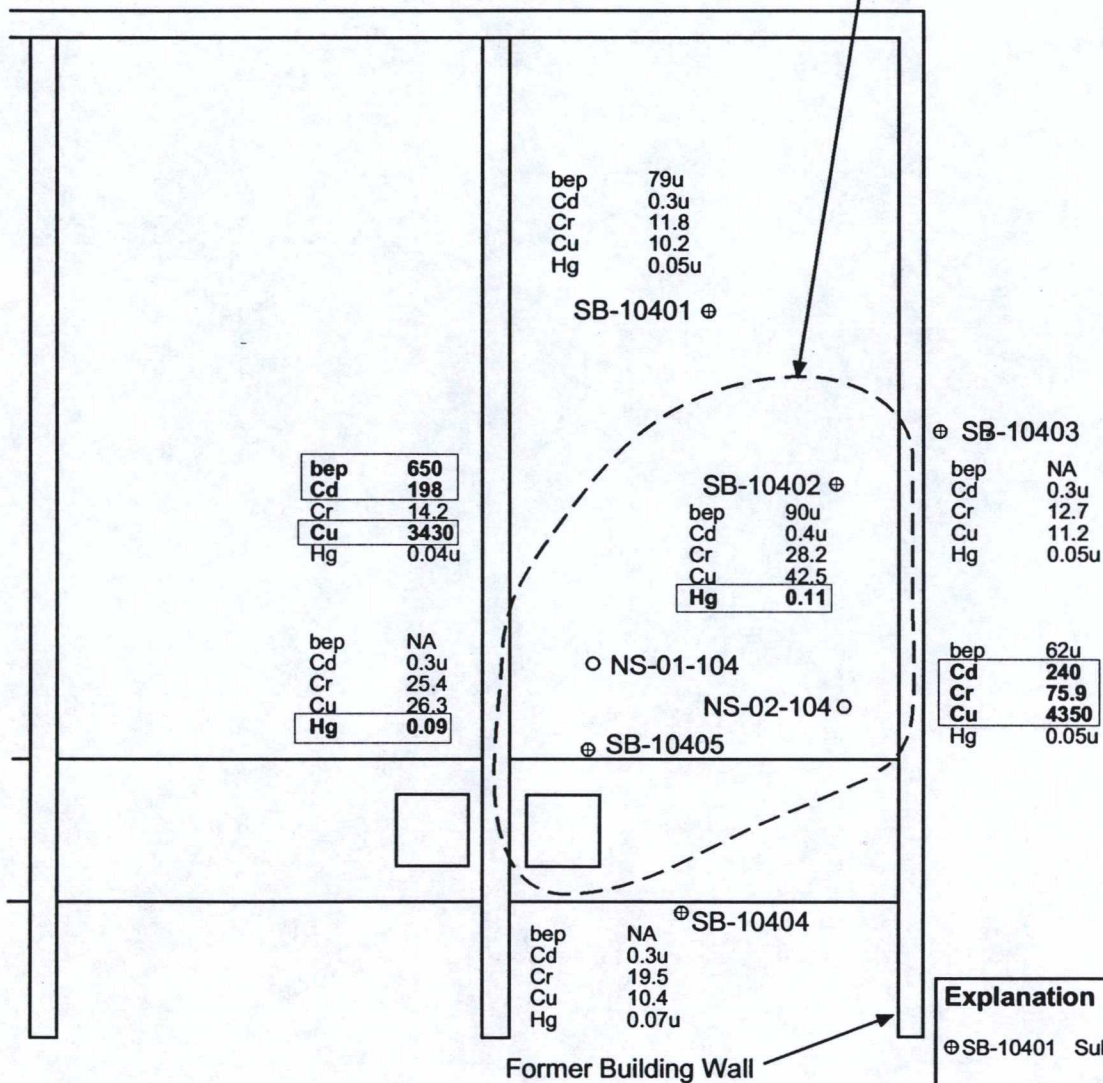
WESTON.
MANAGERS DESIGNERS/CONSULTANTS

SWMU 77
Excavation Plan

FIGURE

4

Excavation Boundary



Explanation

⊕ SB-10401 Subsurface Sample Location

○ NS-01-104 Near Surface Soil Sample

Cd 62 Analyte and Concentration (mg/kg)

bep bis(2-Ethylhexyl)phthalate

 Exceeds Performance Standard

Note: Concentrations are maximum vadose zone concentration for that location.

OA-16 Excavation Plan

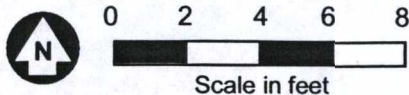


Figure
5

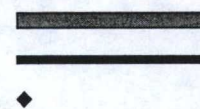
ID	Task Name	Durati	Start	Finish	1999						
					Dec	Jan	Feb	Mar	Apr	May	Jun
1	SWMU 78.B, 87.65, 77 & OA 16 Interim Measures	167d	12/18/98	6/2/99							
2	EPA Approval of IM work Plan	29d	12/18/98	1/15/99							
3	Complete SWMU 78.B, -87.65, -77 & OA16 IM	138d	1/16/99	6/2/99							

Interim Measures Schedule



Project:
Date: 12/17/98

Task
Progress
Milestone



Summary
Rolled Up Task
Rolled Up Milestone ◇



Duration in calendar days

FIGURE

6

TABLES

Table 1—Soil Cleanup Goals

Analyte	Cleanup Criteria (mg/kg) ^{a, b}
bis(2-Ethylhexyl)phthalate	0.35
Cadmium	2.0
Chrome	48.2 ^c
Copper	266
Mercury	0.07 ^c
PCB	Nondetect
TPH	200 ^d

^a The listed values are 100 times MTCA Method B surface water criteria.

^b Confirmatory samples within a factor of 10 of the listed concentrations will be adequate to terminate further excavation.

^c Based on background.

^d Based on MTCA Method A.

Table 2—SWMU Excavation Dimensions

SWMU/AOC	Length (feet)	Width (feet)	Depth (feet)	Volume (cubic yards)
SWMU 2-87.65	30	25	5-10	80
SWMU 77	17	13	5	40
SWMU 78.B	10	8	5	15
OA 16	10	10	10	40

Table 3—SWMUs 2-87.65 and 78.B Confirmatory Sample Analytics

Analyte	Cleanup Goal (mg/kg)
TPH	200
PCB	Nondetect

Table 4—SWMU 77 Confirmatory Sample Analytics

Analyte	Cleanup Goal (mg/kg)
PCB	Nondetect

Table 5—OA 16 Confirmatory Sample Analytics

Analyte	Cleanup Goal (mg/kg)
Cadmium	2
Chromium	48.2
Copper	266
Mercury	0.07
bis(2-Ethylhexyl)phthalate	0.35

Table 6—Confirmatory Sample Details

SWMU	Excavated Area (square feet)	Number of Bottom Samples	Number of Sidewall Samples	Comments
SWMU 2-87.65	375	2	3	Two bottom samples in the triangular excavation (one sample near location 8713 and one under SWMU 2-87.65). One sample from each sidewall
SWMU 77 Containment Pad	220	2	4	Two bottom samples spaced equidistant down the center. One sample from each sidewall
Former tank/piping		2	2	One bottom sample from former tank excavation, two samples from opposite former excavation sidewalls, one bottom sample from the middle of the former pipe run
SWMU 78.B	80	1	4	One bottom sample in the center. One sample from each sidewall
OA 16	100	1	4	One bottom sample in the center. One sample from each sidewall

Table 7—Stockpile Sampling Requirements

Stockpile Size (cubic yards)	Number of Samples
0 to 100	3
101 to 500	5

Table 8—QA Checklist

SWMU _____

	Criteria	Inspection Method	Inspected by	Approved (initial)
1. Mark Soil Excavation Area	+/- 1 foot	Tape measure	Construction Engineer	
2. Soil Manifesting	NA	visual	Boeing	
3. Spill Prevention	Place plastic inside stockpile cell	Visual	Construction Engineer	
	Cover stockpile cell	Visual	Construction Engineer	
	No free liquid in soil	Visual	Construction Engineer	
	Verify no soil is spilled in route to stockpile cell	Visual	Construction Engineer	
4. Sampling	Confirmatory bottom samples and sidewall samples spaced over bottom and sides of excavation as specified in Work Plan	Visual	Construction Engineer	
5. Decontamination	Decontaminate hoe bucket	Observation	Construction Engineer	
6. Backfill	As specified by Boeing	Visual—verify before shipment to site	Boeing Engineer	
7. Excavation area and depth	As delineated based on Work Plan Figures	Measure (using tape measure or equivalent). Measure area and depth in 4 corners and 2 locations in midsection	Construction Engineer	

APPENDIX A
ANALYTICAL DATA

Boeing Plant 2 CMS – Exceedances for SWMU 2-87.65 (Includes SWMU 78.B)

	Station ID:	PL2-109B	PL2-109B	PL2-109B	PL2-109C	PL2-109C	PL2-109C
	Sample ID:	L09-MW109B-14	L09-MW109B-45	L09-MW109B-9	L09-MW109C-14	L09-MW109C-45	L09-MW109C-6
Constituent	Depth (feet bgs):	14	45	9	14	45	6
Pesticlides/PCBs (ug/kg)							
Total PCB		15.00 UT		15.00 UT	174.00 T		15.00 UT
Total Petroleum Hydrocarbons (mg/kg)							
TPH by Washington HCID 8015		10.00 U		10.00 U	290.00		10.00 U
Volatile Organic Compounds (ug/kg)							
1,1,1-Trichloroethane		20.00	1.30 U	13.00	1.80	1.40 U	2.30
1,1,2,2-Tetrachloroethane		4.00 U	1.30 U	1.30 U	1.30 U	1.40 U	1.20 U
1,1,2-Trichloroethane		4.00 U	1.30 U	1.30 U	1.30 U	1.40 U	1.20 U
1,1,2-Trichlorotrifluoroethane		8.10 U	2.70 U	2.50 U	4.60	2.80 U	2.40 U
1,1-Dichloroethane		120.00	1.30 U	240.00	4.30	1.40 U	1.20 U
1,1-Dichloroethene		4.00 U	1.30 U	8.10	1.30 U	1.40 U	1.20 U
1,2-Dichloroethane		5.90	1.30 U	35.00	1.30 U	1.40 U	1.20 U
1,2-Dichloropropane		4.00 U	1.30 U	1.30 U	1.30 U	1.40 U	1.20 U
2-Butanone		20.00 U	6.70 U	6.30 U	6.40 U	7.00 U	6.10 U
2-Chloroethylvinylether		4.00 U	1.30 U	1.30 U	1.30 U	1.40 U	1.20 U
2-Hexanone		20.00 U	6.70 U	6.30 U	6.40 U	7.00 U	6.10 U
4-Methyl-2-Pentanone		20.00 U	6.70 U	6.30 U	6.40 U	7.00 U	6.10 U
Acetone		20.00 U	14.00 B	24.00	19.00 B	15.00 B	6.90 B
Benzene		4.00 U	1.30 U	1.30 U	1.30 U	1.40 U	1.20 U
Bromodichloromethane		4.00 U	1.30 U	1.30 U	1.30 U	1.40 U	1.20 U
Bromoform		4.00 U	1.30 U	1.30 U	1.30 U	1.40 U	1.20 U
Bromomethane		8.10 U	2.70 U	2.50 U	2.50 U	2.80 U	2.40 U
Carbon Disulfide		4.00 U	1.30 U	1.30 U	1.30 U	1.40 U	1.20 U
Carbon Tetrachloride		4.00 U	1.30 U	1.30 U	1.30 U	1.40 U	1.20 U
Chlorobenzene		4.00 U	1.30 U	1.30 U	1.30 U	1.40 U	1.20 U
Chloroethane		8.10 U	2.70 U	2.50 U	2.50 U	2.80 U	2.40 U

Boeing Plant 2 CMS - Exceedances for SWMU 2-87.65

Constituent	Station ID:	PL2-109B	PL2-109B	PL2-109B	PL2-109C	PL2-109C	PL2-109C
	Sample ID:	L09-MW109B-14	L09-MW109B-45	L09-MW109B-9	L09-MW109C-14	L09-MW109C-45	L09-MW109C-6
Depth (feet bgs):		14	45	9	14	45	6
Chloroform		4.00 U	1.30 U	1.30 U	1.30 U	1.40 U	1.20 U
Chloromethane		8.10 U	2.70 U	2.50 U	2.50 U	2.80 U	2.40 U
cis-1,2-Dichloroethene		170.00	1.30 U	780.00	6.70	1.40 U	1.20 U
cis-1,3-Dichloropropene		4.00 U	1.30 U	1.30 U	1.30 U	1.40 U	1.20 U
Dibromochloromethane		4.00 U	1.30 U	1.30 U	1.30 U	1.40 U	1.20 U
Ethylbenzene		4.00 U	1.30 U	1.30 U	1.30 U	1.40 U	1.20 U
m,p-Xylene							
Methylene Chloride		8.10 U	2.70 U	2.50 U	1.30 U	3.50 B	1.20 U
o-Xylene							
Styrene		4.00 U	1.30 U	1.30 U	1.30 U	1.40 U	1.20 U
Tetrachloroethene		6.30	1.30 U	3.70	1.60	1.40 U	6.50
Toluene		4.00 U	1.30 U	5.10	1.30 U	1.40 U	2.10
Total Xylene		8.10 U	2.70 U	2.50 U	2.50 U	2.80 U	1.20 J
trans-1,2-Dichloroethene		4.40	1.30 U	43.00	1.30 U	1.40 U	1.20 U
trans-1,3-Dichloropropene		4.00 U	1.30 U	1.30 U	1.30 U	1.40 U	1.20 U
Trichloroethene		260.00	1.30 U	480.00	24.00	1.40 U	58.00
Trichlorofluoromethane		8.10 U	2.70 U	2.50 U	2.50 U	2.80 U	2.40 U
Vinyl Acetate		4.00 U	1.30 U	1.30 U	1.30 U	1.40 U	1.20 U
Vinyl Chloride		8.10 U	2.70 U	32.00	2.50 U	2.80 U	2.40 U
Semi-Volatile Organic Compounds (ug/kg)							
1,2,4-Trichlorobenzene		26.00 U		28.00 U	25.00 U		26.00 U
1,2-Dichlorobenzene		26.00 U		28.00 U	25.00 U		26.00 U
1,3-Dichlorobenzene		26.00 U		28.00 U	25.00 U		26.00 U
1,4-Dichlorobenzene		26.00 U		28.00 U	25.00 U		26.00 U
2,2'-Oxybis(1-Chloropropane)		26.00 U		28.00 U	25.00 U		26.00 U
2,4,5-Trichlorophenol		130.00 U		140.00 U	120.00 U		130.00 U

Boeing Plant 2 CMS - Exceedances for SWMU 2-87.65

Constituent	Station ID:	PL2-109B	PL2-109B	PL2-109B	PL2-109C	PL2-109C	PL2-109C
	Sample ID:	L09-MW109B-14	L09-MW109B-45	L09-MW109B-9	L09-MW109C-14	L09-MW109C-45	L09-MW109C-6
	Depth (feet bgs):	14	45	9	14	45	6
2,4,6-Trichlorophenol		130.00 U		140.00 U	120.00 U		130.00 U
2,4-Dichlorophenol		78.00 U		83.00 U	74.00 U		76.00 U
2,4-Dimethylphenol		52.00 U		56.00 U	49.00 U		51.00 U
2,4-Dinitrophenol		260.00 U		280.00 U	250.00 U		250.00 U
2,4-Dinitrotoluene		130.00 U		140.00 U	120.00 U		130.00 U
2,6-Dinitrotoluene		130.00 U		140.00 U	120.00 U		130.00 U
2-Chloronaphthalene		26.00 U		28.00 U	6700.00		26.00 U
2-Chlorophenol		26.00 U		28.00 U	25.00 U		26.00 U
2-Methylnaphthalene		26.00 U		28.00 U	25.00 U		26.00 U
2-Methylphenol		26.00 U		28.00 U	25.00 U		26.00 U
2-Nitroaniline		130.00 U		140.00 U	120.00 U		130.00 U
2-Nitrophenol		130.00 U		140.00 U	120.00 U		130.00 U
3,3'-Dichlorobenzidine		130.00 U		140.00 U	120.00 U		130.00 U
3-Nitroaniline		130.00 U		140.00 U	120.00 U		130.00 U
4,6-Dinitro-2-methylphenol		260.00 U		280.00 U	250.00 U		250.00 U
4-Bromophenyl-phenylether		26.00 U		28.00 U	25.00 U		26.00 U
4-Chloro-3-methylphenol		52.00 U		56.00 U	49.00 U		51.00 U
4-Chloroaniline		78.00 U		83.00 U	74.00 U		76.00 U
4-Chlorophenyl-phenylether		26.00 U		28.00 U	25.00 U		26.00 U
4-Methylphenol		26.00 U		28.00 U	25.00 U		26.00 U
4-Nitroaniline		130.00 U		140.00 U	120.00 U		130.00 U
4-Nitrophenol		130.00 U		140.00 U	120.00 U		130.00 U
Benzoic acid		260.00 U		280.00 U	250.00 U		250.00 U
Benzyl alcohol		130.00 U		140.00 U	120.00 U		130.00 U
bis(2-Chloroethoxy)methane		26.00 U		28.00 U	25.00 U		26.00 U
bis(2-Chloroethyl)ether		26.00 U		28.00 U	25.00 U		26.00 U
bis(2-Ethylhexyl)phthalate		26.00 U		28.00 U	41.00		26.00 U

Boeing Plant 2 CMS - Exceedances for SWMU 2-87.65

Constituent	Station ID:	PL2-109B	PL2-109B	PL2-109B	PL2-109C	PL2-109C	PL2-109C
	Sample ID:	L09-MW109B-14	L09-MW109B-45	L09-MW109B-9	L09-MW109C-14	L09-MW109C-45	L09-MW109C-6
Depth (feet bgs):		14	45	9	14	45	6
Butylbenzylphthalate		26.00 U		28.00 U	25.00 U		26.00 U
Carbazole		26.00 U		28.00 U	25.00 U		26.00 U
Di-n-butylphthalate		26.00 U		28.00 U	25.00 U		26.00 U
Di-n-octylphthalate		26.00 U		28.00 U	25.00 U		26.00 U
Dibenzofuran		26.00 U		28.00 U	25.00 U		26.00 U
Diethylphthalate		26.00 U		28.00 U	25.00 U		26.00 U
Dimethylphthalate		26.00 U		28.00 U	25.00 U		26.00 U
Hexachlorobenzene		26.00 U		28.00 U	25.00 U		26.00 U
Hexachlorobutadiene		52.00 U		56.00 U	49.00 U		51.00 U
Hexachlorocyclopentadiene		130.00 U		140.00 U	120.00 U		130.00 U
Hexachloroethane		52.00 U		56.00 U	49.00 U		51.00 U
Isophorone		26.00 U		28.00 U	25.00 U		26.00 U
N-Nitroso-di-n-propylamine		26.00 U		28.00 U	25.00 U		26.00 U
N-Nitrosodiphenylamine		26.00 U		28.00 U	25.00 U		26.00 U
Nitrobenzene		26.00 U		28.00 U	25.00 U		26.00 U
Pentachlorophenol		130.00 U		140.00 U	120.00 U		130.00 U
Phenol		52.00 U		56.00 U	49.00 U		51.00 U
Naphthalene		26.00 U		28.00 U	25.00 U		26.00 U
Acenaphthylene		26.00 U		28.00 U	25.00 U		26.00 U
Acenaphthene		26.00 U		28.00 U	25.00 U		26.00 U
Fluorene		26.00 U		28.00 U	25.00 U		26.00 U
Phenanthrene		26.00 U		28.00 U	23.00 J		26.00 U
Anthracene		26.00 U		28.00 U	25.00 U		26.00 U
Fluoranthene		26.00 U		14.00 J	27.00		26.00 U
Pyrene		26.00 U		14.00 J	26.00		26.00 U
Benzo(a)anthracene		26.00 U		28.00 U	25.00 U		26.00 U
Chrysene		26.00 U		28.00 U	25.00 U		26.00 U

Boeing Plant 2 CMS - Exceedances for SWMU 2-87.65

	Station ID: Sample ID:	PL2-109B L09-MW109B-14	PL2-109B L09-MW109B-45	PL2-109B L09-MW109B-9	PL2-109C L09-MW109C-14	PL2-109C L09-MW109C-45	PL2-109C L09-MW109C-6
Constituent	Depth (feet bgs):	14	45	9	14	45	6
Benzo(b)fluoranthene		26.00 U		28.00 U	25.00 U		26.00 U
Benzo(k)fluoranthene		26.00 U		28.00 U	25.00 U		26.00 U
Benzo(a)pyrene		26.00 U		28.00 U	25.00 U		26.00 U
Indeno(1,2,3-cd)pyrene		26.00 U		28.00 U	25.00 U		26.00 U
Dibenz(a,h)anthracene		26.00 U		28.00 U	25.00 U		26.00 U
Benzo(g,h,i)perylene		26.00 U		28.00 U	25.00 U		26.00 U
Pesticides/PCBs (ug/kg)							
Aroclor 1248		15.00 U		15.00 U	300.00 U		15.00 U
Aroclor 1254		15.00 U		15.00 U	140.00		15.00 U
Aroclor 1260		15.00 U		15.00 U	34.00		15.00 U
Aroclor 1242							
Aroclor 1016							
Aroclor 1016/1242		15.00 U		15.00 U	300.00 U		15.00 U
Total Petroleum Hydrocarbons (mg/kg)							
Diesel Range							
Gas Range							
Oil Range							
TPH by 418.1							
Inorganics (Total) (mg/kg)							
Aluminum							
Antimony							
Arsenic		1.30	1.70	4.00	1.20	1.70	3.20
Barium							
Beryllium							
Cadmium		0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
Calcium							

Boeing Plant 2 CMS - Exceedances for SWMU 2-87.65

Constituent	Station ID:	PL2-109B	PL2-109B	PL2-109B	PL2-109C	PL2-109C	PL2-109C
	Sample ID:	L09-MW109B-14	L09-MW109B-45	L09-MW109B-9	L09-MW109C-14	L09-MW109C-45	L09-MW109C-6
	Depth (feet bgs):	14	45	9	14	45	6
Chromium		12.00	13.70	19.50	12.10	13.10	11.80
Chromium VI							
Cobalt							
Copper		10.90	14.20	24.10	9.50	16.50	12.20
Cyanide							
Iron							
Lead		3.00 U	3.00 U	8.00	3.00 U	3.00 U	6.00
Magnesium							
Manganese							
Mercury		0.10 U	0.10 U	0.10 U	0.05 U	0.05 U	0.10 U
Nickel							
Potassium							
Selenium		0.10 U	0.10 U	0.10 U	0.20	0.20	0.30
Silver							
Sodium							
Thallium		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Vanadium							
Zinc		21.70	19.80	40.10	20.80	22.50	20.40

Boeing Plant 2 CMS - Exceedances for SWMU 2-87.65

Station ID:	PL2-109C	PL2-109C	SB-08707	SB-08707	SB-08708	SB-08708
Sample ID:	L09-MW109C-71	L09-MW109C-9	SB-08707-0030	SB-08707-1030	SB-08708-0030	SB-08708-1030
Constituent	Depth (feet bgs):	71.5	9	3 to N/A	3 to N/A	3 to N/A
Pesticides/PCBs (ug/kg)						
Total PCB		15.00 UT	2000.00 T	1900.00 T	36.00 UT	
Total Petroleum Hydrocarbons (mg/kg)						
TPH by Washington HCID 8015		10.00 U				
Volatile Organic Compounds (ug/kg)						
1,1,1-Trichloroethane		1.40 U	1.30 U	1.10 U	1.80	
1,1,2,2-Tetrachloroethane		1.40 U	1.30 U	1.10 U	1.10 U	
1,1,2-Trichloroethane		1.40 U	1.30 U	1.10 U	1.10 U	
1,1,2-Trichlorotrifluoroethane		2.90 U	2.70 U	2.20 U	2.10 U	
1,1-Dichloroethane		1.40 U	6.70	1.10 U	1.10 U	
1,1-Dichloroethene		1.40 U	1.30 U	1.10 U	1.10 U	
1,2-Dichloroethane		1.40 U	1.30 U	1.10 U	1.10 U	
1,2-Dichloropropane		1.40 U	1.30 U	1.10 U	1.10 U	
2-Butanone		7.10 U	6.70 U	5.50 U	5.40 U	
2-Chloroethylvinylether		1.40 U	1.30 U	5.50 U	5.40 U	
2-Hexanone		7.10 U	6.70 U	5.50 U	5.40 U	
4-Methyl-2-Pentanone		7.10 U	6.70 U	5.50 U	5.40 U	
Acetone		12.00 B	16.00 B	5.50 U	5.40 U	
Benzene		1.40 U	1.30 U	1.10 U	1.10 U	
Bromodichloromethane		1.40 U	1.30 U	1.10 U	1.10 U	
Bromoform		1.40 U	1.30 U	1.10 U	1.10 U	
Bromomethane		2.90 U	2.70 U	2.20 U	2.10 U	
Carbon Disulfide		1.40 U	1.30 U	1.10 U	1.10 U	
Carbon Tetrachloride		1.40 U	1.30 U	1.10 U	1.10 U	
Chlorobenzene		1.40 U	1.30 U	1.10 U	1.10 U	
Chloroethane		2.90 U	2.70 U	2.20 U	2.10 U	

Boeing Plant 2 CMS - Exceedances for SWMU 2-87.65

Station ID:	PL2-109C	PL2-109C	SB-08707	SB-08707	SB-08708	SB-08708
Sample ID:	L09-MW109C-71	L09-MW109C-9	SB-08707-0030	SB-08707-1030	SB-08708-0030	SB-08708-1030
Constituent	Depth (feet bgs):	71.5	9	3 to N/A	3 to N/A	3 to N/A
Chloroform		1.40 U	1.30 U	1.10 U		1.10 U
Chloromethane		2.90 U	2.70 U	2.20 U		2.10 U
cis-1,2-Dichloroethene		1.40 U	2.40	1.10 U		1.20
cis-1,3-Dichloropropene		1.40 U	1.30 U	1.10 U		1.10 U
Dibromochloromethane		1.40 U	1.30 U	1.10 U		1.10 U
Ethylbenzene		1.40 U	1.30 U	1.10 U		1.10 U
m,p-Xylene				1.10 U		1.10 U
Methylene Chloride		3.20 B	1.30 U	2.20 U		2.10 U
o-Xylene				1.10 U		1.10 U
Styrene		1.40 U	1.30 U	1.10 U		1.10 U
Tetrachloroethene		1.40 U	1.30 U	4.20		7.20
Toluene		1.40 U	1.30 U	1.10 U		2.00
Total Xylene		2.90 U	2.70 U			
trans-1,2-Dichloroethene		1.40 U	1.30 U	1.10 U		1.10 U
trans-1,3-Dichloropropene		1.40 U	1.30 U	1.10 U		1.10 U
Trichloroethene		1.40 U	18.00	23.00		47.00
Trichlorofluoromethane		2.90 U	2.70 U	2.20 U		2.10 U
Vinyl Acetate		1.40 U	1.30 U	5.50 U		5.40 U
Vinyl Chloride		2.90 U	2.70 U	2.20 U		2.10 U
Semi-Volatile Organic Compounds (ug/kg)						
1,2,4-Trichlorobenzene			27.00 U	75.00 U	76.00 U	72.00 U
1,2-Dichlorobenzene			27.00 U	75.00 U	76.00 U	72.00 U
1,3-Dichlorobenzene			27.00 U	75.00 U	76.00 U	72.00 U
1,4-Dichlorobenzene			27.00 U	75.00 U	76.00 U	72.00 U
2,2'-Oxybis(1-Chloropropane)			27.00 U	75.00 U	76.00 U	72.00 U
2,4,5-Trichlorophenol			130.00 U	380.00 U	380.00 U	360.00 U

Boeing Plant 2 CMS - Exceedances for SWMU 2-87.65

Constituent	Station ID:	PL2-109C	PL2-109C	SB-08707	SB-08707	SB-08708	SB-08708
	Sample ID:	L09-MW109C-71	L09-MW109C-9	SB-08707-0030	SB-08707-1030	SB-08708-0030	SB-08708-1030
Depth (feet bgs):		71.5	9	3 to N/A	3 to N/A	3 to N/A	3 to N/A
2,4,6-Trichlorophenol			130.00 U	380.00 U	380.00 U	360.00 U	
2,4-Dichlorophenol			80.00 U	230.00 U	230.00 U	220.00 U	
2,4-Dimethylphenol			53.00 U	230.00 U	230.00 U	220.00 U	
2,4-Dinitrophenol			270.00 U	750.00 U	760.00 U	720.00 U	
2,4-Dinitrotoluene			130.00 U	380.00 U	380.00 U	360.00 U	
2,6-Dinitrotoluene			130.00 U	380.00 U	380.00 U	360.00 U	
2-Chloronaphthalene			27.00 U	75.00 U	76.00 U	72.00 U	
2-Chlorophenol			27.00 U	75.00 U	76.00 U	72.00 U	
2-Methylnaphthalene			27.00 U	75.00 U	76.00 U	72.00 U	
2-Methylphenol			27.00 U	150.00 U	150.00 U	140.00 U	
2-Nitroaniline			130.00 U	380.00 U	380.00 U	360.00 U	
2-Nitrophenol			130.00 U	380.00 U	380.00 U	360.00 U	
3,3'-Dichlorobenzidine			130.00 U	380.00 U	380.00 U	360.00 U	
3-Nitroaniline			130.00 U	450.00 U	460.00 U	430.00 U	
4,6-Dinitro-2-methylphenol			270.00 U	750.00 U	760.00 U	720.00 U	
4-Bromophenyl-phenylether			27.00 U	75.00 U	76.00 U	72.00 U	
4-Chloro-3-methylphenol			53.00 U	150.00 U	150.00 U	140.00 U	
4-Chloroaniline			80.00 U	230.00 U	230.00 U	220.00 U	
4-Chlorophenyl-phenylether			27.00 U	75.00 U	76.00 U	72.00 U	
4-Methylphenol			27.00 U	75.00 U	76.00 U	72.00 U	
4-Nitroaniline			130.00 U	380.00 U	380.00 U	360.00 U	
4-Nitrophenol			130.00 U	380.00 U	380.00 U	360.00 U	
Benzoic acid			270.00 U	750.00 U	760.00 U	720.00 U	
Benzyl alcohol			130.00 U	380.00 U	380.00 U	360.00 U	
bis(2-Chloroethoxy)methane			27.00 U	75.00 U	76.00 U	72.00 U	
bis(2-Chloroethyl)ether			27.00 U	150.00 U	150.00 U	140.00 U	
bis(2-Ethylhexyl)phthalate			27.00 U	75.00 U	76.00 U	72.00 U	

Boeing Plant 2 CMS - Exceedances for SWMU 2-87.65

Constituent	Station ID:	PL2-109C	PL2-109C	SB-08707	SB-08707	SB-08708	SB-08708
	Sample ID:	L09-MW109C-71	L09-MW109C-9	SB-08707-0030	SB-08707-1030	SB-08708-0030	SB-08708-1030
Depth (feet bgs):		71.5	9	3 to N/A	3 to N/A	3 to N/A	3 to N/A
Butylbenzylphthalate			27.00 U	75.00 U	76.00 U	72.00 U	
Carbazole			27.00 U	75.00 U	76.00 U	72.00 U	
Di-n-butylphthalate			27.00 U	75.00 U	76.00 U	72.00 U	
Di-n-octylphthalate			27.00 U	75.00 U	76.00 U	72.00 U	
Dibenzofuran			27.00 U	75.00 U	76.00 U	72.00 U	
Diethylphthalate			27.00 U	75.00 U	76.00 U	72.00 U	
Dimethylphthalate			27.00 U	75.00 U	76.00 U	72.00 U	
Hexachlorobenzene			27.00 U	75.00 U	76.00 U	72.00 U	
Hexachlorobutadiene			53.00 U	150.00 U	150.00 U	140.00 U	
Hexachlorocyclopentadiene			130.00 U	380.00 U	380.00 U	360.00 U	
Hexachloroethane			53.00 U	150.00 U	150.00 U	140.00 U	
Isophorone			27.00 U	75.00 U	76.00 U	72.00 U	
N-Nitroso-di-n-propylamine			27.00 U	150.00 U	150.00 U	140.00 U	
N-Nitrosodiphenylamine			27.00 U	75.00 U	76.00 U	72.00 U	
Nitrobenzene			27.00 U	75.00 U	76.00 U	72.00 U	
Pentachlorophenol			130.00 U	380.00 U	380.00 U	360.00 U	
Phenol			53.00 U	150.00 U	150.00 U	140.00 U	
Naphthalene			27.00 U	75.00 U	76.00 U	72.00 U	
Acenaphthylene			27.00 U	75.00 U	76.00 U	72.00 U	
Acenaphthene			27.00 U	75.00 U	76.00 U	72.00 U	
Fluorene			27.00 U	75.00 U	76.00 U	72.00 U	
Phenanthrene			27.00 U	75.00 U	76.00 U	72.00 U	
Anthracene			27.00 U	75.00 U	76.00 U	72.00 U	
Fluoranthene			27.00 U	75.00 U	76.00 U	72.00 U	
Pyrene			27.00 U	75.00 U	76.00 U	72.00 U	
Benzo(a)anthracene			27.00 U	75.00 U	76.00 U	72.00 U	
Chrysene			27.00 U	75.00 U	76.00 U	72.00 U	

Boeing Plant 2 CMS - Exceedances for SWMU 2-87.65

Station ID:		PL2-109C	PL2-109C	SB-08707	SB-08707	SB-08708	SB-08708
Sample ID:		L09-MW109C-71	L09-MW109C-9	SB-08707-0030	SB-08707-1030	SB-08708-0030	SB-08708-1030
Constituent	Depth (feet bgs):	71.5	9	3 to N/A	3 to N/A	3 to N/A	3 to N/A
Benzo(b)fluoranthene			27.00 U	75.00 U	76.00 U	72.00 U	
Benzo(k)fluoranthene			27.00 U	75.00 U	76.00 U	72.00 U	
Benzo(a)pyrene			27.00 U	75.00 U	76.00 U	72.00 U	
Indeno(1,2,3-cd)pyrene			27.00 U	75.00 U	76.00 U	72.00 U	
Dibenz(a,h)anthracene			27.00 U	75.00 U	76.00 U	72.00 U	
Benzo(g,h,i)perylene			27.00 U	75.00 U	76.00 U	72.00 U	
Pesticides/PCBs (ug/kg)							
Aroclor 1248			15.00 U	600.00	700.00	36.00 U	
Aroclor 1254			15.00 U	1400.00	1200.00	36.00 U	
Aroclor 1260			15.00 U	220.00 UI	140.00 UI	36.00 U	
Aroclor 1242				110.00 UI	61.00 UI	36.00 U	
Aroclor 1016				37.00 U	38.00 U	36.00 U	
Aroclor 1016/1242			15.00 U				
Total Petroleum Hydrocarbons (mg/kg)							
Diesel Range				25.00 U		25.00 U	
Gas Range				20.00 U		20.00 U	
Oil Range				50.00 U		50.00 U	
TPH by 418.1							
Inorganics (Total) (mg/kg)							
Aluminum				12900.00		9410.00	9760.00
Antimony							
Arsenic		1.80	2.00	5.00 U		5.00 U	5.00 U
Barium				38.30		25.30	27.10
Beryllium				0.10 U		0.10	0.10
Cadmium		0.30 U	0.30 U	0.20 U		0.20 U	0.20 U
Calcium				5650.00		4500.00	4770.00

Boeing Plant 2 CMS - Exceedances for SWMU 2-87.65

Constituent	Station ID:	PL2-109C	PL2-109C	SB-08707	SB-08707	SB-08708	SB-08708
	Sample ID:	L09-MW109C-71	L09-MW109C-9	SB-08707-0030	SB-08707-1030	SB-08708-0030	SB-08708-1030
	Depth (feet bgs):	71.5	9	3 to N/A	3 to N/A	3 to N/A	3 to N/A
Chromium		12.00	15.20	15.50 J		11.00 J	11.00 J
Chromium VI				0.23 UJH		0.22 UJH	
Cobalt				4.20		3.80	4.10
Copper		15.90	15.50	12.50		8.40	8.50
Cyanide							
Iron				14200.00		10700.00	11100.00
Lead		3.00 U	3.00 U	5.00 J		7.00 J	8.00 J
Magnesium				2370.00		2200.00	2200.00
Manganese				117.00		101.00	110.00
Mercury		0.10 U	0.05 U	0.06 UJ		0.05 UJ	0.04 UJ
Nickel				10.00 J+		9.00 J+	9.00 J+
Potassium				780.00		710.00	760.00
Selenium		0.40	0.30	5.00 U		5.00 U	5.00 U
Silver				0.30 U		0.30 U	0.30 U
Sodium				1250.00		830.00	848.00
Thallium		0.10 U	0.10 U	5.00 U		6.00	5.00 U
Vanadium				48.70		35.60	35.40
Zinc		21.50	27.30	26.70		21.80	22.60

Boeing Plant 2 CMS - Exceedances for SWMU 2-87.65

Station ID:		SB-08711	SB-08711	SB-08711	SB-08712	SB-08712	SB-08712
Sample ID:		SB-08711-0020	SB-08711-0070	SB-08711-0100	SB-08712-0020	SB-08712-0065	SB-08712-0085
Constituent	Depth (feet bgs):	2 to N/A	7 to N/A	10 to N/A	2 to N/A	6.5 to N/A	8.5 to N/A
Pesticides/PCBs (ug/kg)							
Total PCB		37.00 UT	47.00 UT	43.00 UT	36.00 UT	47.00 UT	46.00 UT
Total Petroleum Hydrocarbons (mg/kg)							
TPH by Washington HCID 8015							
Volatile Organic Compounds (ug/kg)							
1,1,1-Trichloroethane							
1,1,2,2-Tetrachloroethane							
1,1,2-Trichloroethane							
1,1,2-Trichlorotrifluoroethane							
1,1-Dichloroethane							
1,1-Dichloroethene							
1,2-Dichloroethane							
1,2-Dichloropropane							
2-Butanone							
2-Chloroethylvinylether							
2-Hexanone							
4-Methyl-2-Pentanone							
Acetone							
Benzene							
Bromodichloromethane							
Bromoform							
Bromomethane							
Carbon Disulfide							
Carbon Tetrachloride							
Chlorobenzene							
Chloroethane							

Boeing Plant 2 CMS - Exceedances for SWMU 2-87.65

Constituent	Station ID:	SB-08711	SB-08711	SB-08711	SB-08712	SB-08712	SB-08712
	Sample ID:	SB-08711-0020	SB-08711-0070	SB-08711-0100	SB-08712-0020	SB-08712-0065	SB-08712-0085
Depth (feet bgs):		2 to N/A	7 to N/A	10 to N/A	2 to N/A	6.5 to N/A	8.5 to N/A
Chloroform							
Chloromethane							
cis-1,2-Dichloroethene							
cis-1,3-Dichloropropene							
Dibromochloromethane							
Ethylbenzene							
m,p-Xylene							
Methylene Chloride							
o-Xylene							
Styrene							
Tetrachloroethene							
Toluene							
Total Xylene							
trans-1,2-Dichloroethene							
trans-1,3-Dichloropropene							
Trichloroethene							
Trichlorofluoromethane							
Vinyl Acetate							
Vinyl Chloride							
Semi-Volatile Organic Compounds (ug/kg)							
1,2,4-Trichlorobenzene							
1,2-Dichlorobenzene							
1,3-Dichlorobenzene							
1,4-Dichlorobenzene							
2,2'-Oxybis(1-Chloropropane)							
2,4,5-Trichlorophenol							

Boeing Plant 2 CMS - Exceedances for SWMU 2-87.65

Constituent	Station ID:	SB-08711	SB-08711	SB-08711	SB-08712	SB-08712	SB-08712
	Sample ID:	SB-08711-0020	SB-08711-0070	SB-08711-0100	SB-08712-0020	SB-08712-0065	SB-08712-0085
Depth (feet bgs):		2 to N/A	7 to N/A	10 to N/A	2 to N/A	6.5 to N/A	8.5 to N/A
2,4,6-Trichlorophenol							
2,4-Dichlorophenol							
2,4-Dimethylphenol							
2,4-Dinitrophenol							
2,4-Dinitrotoluene							
2,6-Dinitrotoluene							
2-Chloronaphthalene							
2-Chlorophenol							
2-Methylnaphthalene							
2-Methylphenol							
2-Nitroaniline							
2-Nitrophenol							
3,3'-Dichlorobenzidine							
3-Nitroaniline							
4,6-Dinitro-2-methylphenol							
4-Bromophenyl-phenylether							
4-Chloro-3-methylphenol							
4-Chloroaniline							
4-Chlorophenyl-phenylether							
4-Methylphenol							
4-Nitroaniline							
4-Nitrophenol							
Benzoic acid							
Benzyl alcohol							
bis(2-Chloroethoxy)methane							
bis(2-Chloroethyl)ether							
bis(2-Ethylhexyl)phthalate							

Boeing Plant 2 CMS - Exceedances for SWMU 2-87.65

Constituent	Station ID:	SB-08711	SB-08711	SB-08711	SB-08712	SB-08712	SB-08712
	Sample ID:	SB-08711-0020	SB-08711-0070	SB-08711-0100	SB-08712-0020	SB-08712-0065	SB-08712-0085
	Depth (feet bgs):	2 to N/A	7 to N/A	10 to N/A	2 to N/A	6.5 to N/A	8.5 to N/A
Butylbenzylphthalate							
Carbazole							
Di-n-butylphthalate							
Di-n-octylphthalate							
Dibenzofuran							
Diethylphthalate							
Dimethylphthalate							
Hexachlorobenzene							
Hexachlorobutadiene							
Hexachlorocyclopentadiene							
Hexachloroethane							
Isophorone							
N-Nitroso-di-n-propylamine							
N-Nitrosodiphenylamine							
Nitrobenzene							
Pentachlorophenol							
Phenol							
Naphthalene							
Acenaphthylene							
Acenaphthene							
Fluorene							
Phenanthrene							
Anthracene							
Fluoranthene							
Pyrene							
Benzo(a)anthracene							
Chrysene							

Boeing Plant 2 CMS - Exceedances for SWMU 2-87.65

Station ID:		SB-08711	SB-08711	SB-08711	SB-08712	SB-08712	SB-08712
Sample ID:		SB-08711-0020	SB-08711-0070	SB-08711-0100	SB-08712-0020	SB-08712-0065	SB-08712-0085
Constituent	Depth (feet bgs):	2 to N/A	7 to N/A	10 to N/A	2 to N/A	6.5 to N/A	8.5 to N/A
Benzo(b)fluoranthene							
Benzo(k)fluoranthene							
Benzo(a)pyrene							
Indeno(1,2,3-cd)pyrene							
Dibenz(a,h)anthracene							
Benzo(g,h,i)perylene							
Pesticides/PCBs (ug/kg)							
Aroclor 1248		37.00 U	47.00 U	43.00 U	36.00 U	47.00 U	46.00 U
Aroclor 1254		37.00 U	47.00 U	43.00 U	36.00 U	47.00 U	46.00 U
Aroclor 1260		37.00 U	47.00 U	43.00 U	36.00 U	47.00 U	46.00 U
Aroclor 1242		37.00 U	47.00 U	43.00 U	36.00 U	47.00 U	46.00 U
Aroclor 1016		37.00 U	47.00 U	43.00 U	36.00 U	47.00 U	46.00 U
Aroclor 1016/1242							
Total Petroleum Hydrocarbons (mg/kg)							
Diesel Range							
Gas Range							
Oil Range							
TPH by 418.1							
Inorganics (Total) (mg/kg)							
Aluminum							
Antimony							
Arsenic							
Barium							
Beryllium							
Cadmium							
Calcium							

Boeing Plant 2 CMS - Exceedances for SWMU 2-87.65

Constituent	Station ID:	SB-08711	SB-08711	SB-08711	SB-08712	SB-08712	SB-08712
	Sample ID:	SB-08711-0020	SB-08711-0070	SB-08711-0100	SB-08712-0020	SB-08712-0065	SB-08712-0085
	Depth (feet bgs):	2 to N/A	7 to N/A	10 to N/A	2 to N/A	6.5 to N/A	8.5 to N/A
Chromium							
Chromium VI							
Cobalt							
Copper							
Cyanide							
Iron							
Lead							
Magnesium							
Manganese							
Mercury							
Nickel							
Potassium							
Selenium							
Silver							
Sodium							
Thallium							
Vanadium							
Zinc							

Boeing Plant 2 CMS - Exceedances for SWMU 2-87.65

	Station ID:	SB-08713	SB-08713	SB-08713	SB-08714	SB-08714	SB-08714
	Sample ID:	SB-08713-0020	SB-08713-0060	SB-08713-0100	SB-08714-0020	SB-08714-0070	SB-08714-0100
Constituent	Depth (feet bgs):	2 to N/A	6 to N/A	10 to N/A	2 to N/A	7 to N/A	10 to N/A
Pesticides/PCBs (ug/kg)							
Total PCB		1050.00 T	47.00 UT	200.00 T	42.00 UT	48.00 UT	43.00 UT
Total Petroleum Hydrocarbons (mg/kg)							
TPH by Washington HCID 8015							
Volatile Organic Compounds (ug/kg)							
1,1,1-Trichloroethane							
1,1,2,2-Tetrachloroethane							
1,1,2-Trichloroethane							
1,1,2-Trichlorotrifluoroethane							
1,1-Dichloroethane							
1,1-Dichloroethene							
1,2-Dichloroethane							
1,2-Dichloropropane							
2-Butanone							
2-Chloroethylvinylether							
2-Hexanone							
4-Methyl-2-Pentanone							
Acetone							
Benzene							
Bromodichloromethane							
Bromoform							
Bromomethane							
Carbon Disulfide							
Carbon Tetrachloride							
Chlorobenzene							
Chloroethane							

Boeing Plant 2 CMS - Exceedances for SWMU 2-87.65

Constituent	Station ID:	SB-08713	SB-08713	SB-08713	SB-08714	SB-08714	SB-08714
	Sample ID:	SB-08713-0020	SB-08713-0060	SB-08713-0100	SB-08714-0020	SB-08714-0070	SB-08714-0100
Depth (feet bgs):		2 to N/A	6 to N/A	10 to N/A	2 to N/A	7 to N/A	10 to N/A
Chloroform							
Chloromethane							
cis-1,2-Dichloroethene							
cis-1,3-Dichloropropene							
Dibromochloromethane							
Ethylbenzene							
m,p-Xylene							
Methylene Chloride							
o-Xylene							
Styrene							
Tetrachloroethene							
Toluene							
Total Xylene							
trans-1,2-Dichloroethene							
trans-1,3-Dichloropropene							
Trichloroethene							
Trichlorofluoromethane							
Vinyl Acetate							
Vinyl Chloride							
Semi-Volatile Organic Compounds (ug/kg)							
1,2,4-Trichlorobenzene							
1,2-Dichlorobenzene							
1,3-Dichlorobenzene							
1,4-Dichlorobenzene							
2,2'-Oxybis(1-Chloropropane)							
2,4,5-Trichlorophenol							

Boeing Plant 2 CMS - Exceedances for SWMU 2-87.65

	Station ID:	SB-08713	SB-08713	SB-08713	SB-08714	SB-08714	SB-08714
	Sample ID:	SB-08713-0020	SB-08713-0060	SB-08713-0100	SB-08714-0020	SB-08714-0070	SB-08714-0100
Constituent	Depth (feet bgs):	2 to N/A	6 to N/A	10 to N/A	2 to N/A	7 to N/A	10 to N/A
2,4,6-Trichlorophenol							
2,4-Dichlorophenol							
2,4-Dimethylphenol							
2,4-Dinitrophenol							
2,4-Dinitrotoluene							
2,6-Dinitrotoluene							
2-Chloronaphthalene							
2-Chlorophenol							
2-Methylnaphthalene							
2-Methylphenol							
2-Nitroaniline							
2-Nitrophenol							
3,3'-Dichlorobenzidine							
3-Nitroaniline							
4,6-Dinitro-2-methylphenol							
4-Bromophenyl-phenylether							
4-Chloro-3-methylphenol							
4-Chloroaniline							
4-Chlorophenyl-phenylether							
4-Methylphenol							
4-Nitroaniline							
4-Nitrophenol							
Benzoic acid							
Benzyl alcohol							
bis(2-Chloroethoxy)methane							
bis(2-Chloroethyl)ether							
bis(2-Ethylhexyl)phthalate							

Boeing Plant 2 CMS - Exceedances for SWMU 2-87.65

Constituent	Station ID:	SB-08713	SB-08713	SB-08713	SB-08714	SB-08714	SB-08714
	Sample ID:	SB-08713-0020	SB-08713-0060	SB-08713-0100	SB-08714-0020	SB-08714-0070	SB-08714-0100
Depth (feet bgs):		2 to N/A	6 to N/A	10 to N/A	2 to N/A	7 to N/A	10 to N/A
Butylbenzylphthalate							
Carbazole							
Di-n-butylphthalate							
Di-n-octylphthalate							
Dibenzofuran							
Diethylphthalate							
Dimethylphthalate							
Hexachlorobenzene							
Hexachlorobutadiene							
Hexachlorocyclopentadiene							
Hexachloroethane							
Isophorone							
N-Nitroso-di-n-propylamine							
N-Nitrosodiphenylamine							
Nitrobenzene							
Pentachlorophenol							
Phenol							
Naphthalene							
Acenaphthylene							
Acenaphthene							
Fluorene							
Phenanthrene							
Anthracene							
Fluoranthene							
Pyrene							
Benzo(a)anthracene							
Chrysene							

Boeing Plant 2 CMS - Exceedances for SWMU 2-87.65

Station ID:		SB-08713	SB-08713	SB-08713	SB-08714	SB-08714	SB-08714
Sample ID:		SB-08713-0020	SB-08713-0060	SB-08713-0100	SB-08714-0020	SB-08714-0070	SB-08714-0100
Constituent	Depth (feet bgs):	2 to N/A	6 to N/A	10 to N/A	2 to N/A	7 to N/A	10 to N/A
Benzo(b)fluoranthene							
Benzo(k)fluoranthene							
Benzo(a)pyrene							
Indeno(1,2,3-cd)pyrene							
Dibenz(a,h)anthracene							
Benzo(g,h,i)perylene							
Pesticides/PCBs (ug/kg)							
Aroclor 1248		38.00 U	47.00 U	43.00 U	42.00 U	48.00 U	43.00 U
Aroclor 1254		800.00	47.00 U	200.00	42.00 U	48.00 U	43.00 U
Aroclor 1260		250.00	47.00 U	43.00 U	42.00 U	48.00 U	43.00 U
Aroclor 1242		38.00 U	47.00 U	43.00 U	42.00 U	48.00 U	43.00 U
Aroclor 1016		38.00 U	47.00 U	43.00 U	42.00 U	48.00 U	43.00 U
Aroclor 1016/1242							
Total Petroleum Hydrocarbons (mg/kg)							
Diesel Range							
Gas Range							
Oil Range							
TPH by 418.1					13.00 U	140.00	13.00 U
Inorganics (Total) (mg/kg)							
Aluminum							
Antimony							
Arsenic							
Barium							
Beryllium							
Cadmium							
Calcium							

Boeing Plant 2 CMS - Exceedances for SWMU 2-87.65

Constituent	Station ID:	SB-08713	SB-08713	SB-08713	SB-08714	SB-08714	SB-08714
	Sample ID:	SB-08713-0020	SB-08713-0060	SB-08713-0100	SB-08714-0020	SB-08714-0070	SB-08714-0100
Depth (feet bgs):		2 to N/A	6 to N/A	10 to N/A	2 to N/A	7 to N/A	10 to N/A
Chromium							
Chromium VI							
Cobalt							
Copper							
Cyanide							
Iron							
Lead							
Magnesium							
Manganese							
Mercury							
Nickel							
Potassium							
Selenium							
Silver							
Sodium							
Thallium							
Vanadium							
Zinc							

Boeing Plant 2 CMS - Exceedances for SWMU 2-87.65

Station ID:	SB-08715	SB-08715	SB-08715	SB-08715	SB-10401	SB-10403
Sample ID:	SB-08715-0020	SB-08715-0070	SB-08715-0095	SB-08715-1020	W15-SB-10401-0100	W20-SB-10403-0015
Constituent	Depth (feet bgs):	2 to N/A	7 to N/A	9.5 to N/A	2 to N/A	1.5 to N/A
Pesticides/PCBs (ug/kg)						
Total PCB		39.00 UT	50.00 UT	44.00 UT	36.00 UT	78.00 UT
Total Petroleum Hydrocarbons (mg/kg)						
TPH by Washington HCID 8015						
Volatile Organic Compounds (ug/kg)						
1,1,1-Trichloroethane					150.00 U	
1,1,2,2-Tetrachloroethane					150.00 U	
1,1,2-Trichloroethane					150.00 U	
1,1,2-Trichlorotrifluoroethane					310.00 U	
1,1-Dichloroethane					150.00 U	
1,1-Dichloroethene					150.00 U	
1,2-Dichloroethane					150.00 U	
1,2-Dichloropropane					150.00 U	
2-Butanone					2000.00 UB	
2-Chloroethylvinylether					770.00 U	
2-Hexanone					770.00 U	
4-Methyl-2-Pentanone					770.00 U	
Acetone					770.00 U	
Benzene					150.00 U	
Bromodichloromethane					150.00 U	
Bromoform					150.00 U	
Bromomethane					310.00 U	
Carbon Disulfide					150.00 U	
Carbon Tetrachloride					150.00 U	
Chlorobenzene					150.00 U	
Chloroethane					310.00 U	

Boeing Plant 2 CMS - Exceedances for SWMU 2-87.65

	Station ID:	SB-08715	SB-08715	SB-08715	SB-08715	SB-10401	SB-10403
	Sample ID:	SB-08715-0020	SB-08715-0070	SB-08715-0095	SB-08715-1020	W15-SB-10401-0100	W20-SB-10403-0015
Constituent	Depth (feet bgs):	2 to N/A	7 to N/A	9.5 to N/A	2 to N/A		1.5 to N/A
Chloroform						150.00 U	
Chloromethane						310.00 U	
cis-1,2-Dichloroethene						150.00 U	
cis-1,3-Dichloropropene						150.00 U	
Dibromochloromethane						150.00 U	
Ethylbenzene						150.00 U	
m,p-Xylene							
Methylene Chloride						310.00 U	
o-Xylene							
Styrene						150.00 U	
Tetrachloroethene						150.00 U	
Toluene						150.00 U	
Total Xylene						310.00 U	
trans-1,2-Dichloroethene						150.00 U	
trans-1,3-Dichloropropene						150.00 U	
Trichloroethene						220.00	
Trichlorofluoromethane						310.00 U	
Vinyl Acetate						770.00 U	
Vinyl Chloride						310.00 U	
Semi-Volatile Organic Compounds (ug/kg)							
1,2,4-Trichlorobenzene						79.00 U	
1,2-Dichlorobenzene						79.00 U	
1,3-Dichlorobenzene						79.00 U	
1,4-Dichlorobenzene						79.00 U	
2,2'-Oxybis(1-Chloropropane)						79.00 U	
2,4,5-Trichlorophenol						390.00 U	

Boeing Plant 2 CMS - Exceedances for SWMU 2-87.65

Constituent	Station ID:	SB-08715	SB-08715	SB-08715	SB-08715	SB-10401	SB-10403
	Sample ID:	SB-08715-0020	SB-08715-0070	SB-08715-0095	SB-08715-1020	W15-SB-10401-0100	W20-SB-10403-0015
Depth (feet bgs):		2 to N/A	7 to N/A	9.5 to N/A	2 to N/A		1.5 to N/A
2,4,6-Trichlorophenol						390.00 U	
2,4-Dichlorophenol						240.00 U	
2,4-Dimethylphenol						160.00 U	
2,4-Dinitrophenol						790.00 U	
2,4-Dinitrotoluene						390.00 U	
2,6-Dinitrotoluene						390.00 U	
2-Chloronaphthalene						79.00 U	
2-Chlorophenol						79.00 U	
2-Methylnaphthalene						79.00 U	
2-Methylphenol						79.00 U	
2-Nitroaniline						390.00 U	
2-Nitrophenol						390.00 U	
3,3'-Dichlorobenzidine						390.00 U	
3-Nitroaniline						390.00 U	
4,6-Dinitro-2-methylphenol						790.00 U	
4-Bromophenyl-phenylether						79.00 U	
4-Chloro-3-methylphenol						160.00 U	
4-Chloroaniline						240.00 U	
4-Chlorophenyl-phenylether						79.00 U	
4-Methylphenol						79.00 U	
4-Nitroaniline						390.00 U	
4-Nitrophenol						390.00 U	
Benzoic acid						790.00 U	
Benzyl alcohol						390.00 U	
bis(2-Chloroethoxy)methane						79.00 U	
bis(2-Chloroethyl)ether						79.00 U	
bis(2-Ethylhexyl)phthalate						79.00 U	

Boeing Plant 2 CMS - Exceedances for SWMU 2-87.65

Constituent	Station ID:	SB-08715	SB-08715	SB-08715	SB-08715	SB-10401	SB-10403
	Sample ID:	SB-08715-0020	SB-08715-0070	SB-08715-0095	SB-08715-1020	W15-SB-10401-0100	W20-SB-10403-0015
Depth (feet bgs):		2 to N/A	7 to N/A	9.5 to N/A	2 to N/A		1.5 to N/A
Butylbenzylphthalate						79.00 U	
Carbazole						79.00 U	
Di-n-butylphthalate						79.00 U	
Di-n-octylphthalate						79.00 U	
Dibenzofuran						79.00 U	
Diethylphthalate						79.00 U	
Dimethylphthalate						79.00 U	
Hexachlorobenzene						79.00 U	
Hexachlorobutadiene						160.00 U	
Hexachlorocyclopentadiene						390.00 U	
Hexachloroethane						160.00 U	
Isophorone						79.00 U	
N-Nitroso-di-n-propylamine						79.00 U	
N-Nitrosodiphenylamine						79.00 U	
Nitrobenzene						79.00 U	
Pentachlorophenol						390.00 U	
Phenol						160.00 U	
Naphthalene						79.00 U	
Acenaphthylene						79.00 U	
Acenaphthene						79.00 U	
Fluorene						79.00 U	
Phenanthrene						79.00 U	
Anthracene						79.00 U	
Fluoranthene						79.00 U	
Pyrene						79.00 U	
Benzo(a)anthracene						79.00 U	
Chrysene						79.00 U	

Boeing Plant 2 CMS - Exceedances for SWMU 2-87.65

Station ID:	SB-08715	SB-08715	SB-08715	SB-08715	SB-10401	SB-10403
Sample ID:	SB-08715-0020	SB-08715-0070	SB-08715-0095	SB-08715-1020	W15-SB-10401-0100	W20-SB-10403-0015
Constituent	Depth (feet bgs):	2 to N/A	7 to N/A	9.5 to N/A	2 to N/A	1.5 to N/A
Benzo(b)fluoranthene					79.00 U	
Benzo(k)fluoranthene					79.00 U	
Benzo(a)pyrene					79.00 U	
Indeno(1,2,3-cd)pyrene					79.00 U	
Dibenz(a,h)anthracene					79.00 U	
Benzo(g,h,i)perylene					79.00 U	
Pesticides/PCBs (ug/kg)						
Aroclor 1248		39.00 U	50.00 U	44.00 U	36.00 U	78.00 U
Aroclor 1254		39.00 U	50.00 U	44.00 U	36.00 U	78.00 U
Aroclor 1260		39.00 U	50.00 U	44.00 U	36.00 U	78.00 U
Aroclor 1242		39.00 U	50.00 U	44.00 U	36.00 U	
Aroclor 1016		39.00 U	50.00 U	44.00 U	36.00 U	
Aroclor 1016/1242						78.00 U
Total Petroleum Hydrocarbons (mg/kg)						
Diesel Range						
Gas Range						
Oil Range						
TPH by 418.1		12.00 U	51.00	13.00 U	11.00 U	
Inorganics (Total) (mg/kg)						
Aluminum						9270.00
Antimony					6.00 U	5.00 UJ
Arsenic					6.00 U	5.00 U
Barium					25.00	24.20
Beryllium					0.10 U	0.10
Cadmium					0.30	0.20 U
Calcium						5190.00

Boeing Plant 2 CMS - Exceedances for SWMU 2-87.65

	Station ID:	SB-08715	SB-08715	SB-08715	SB-08715	SB-10401	SB-10403
	Sample ID:	SB-08715-0020	SB-08715-0070	SB-08715-0095	SB-08715-1020	W15-SB-10401-0100	W20-SB-10403-0015
Constituent	Depth (feet bgs):	2 to N/A	7 to N/A	9.5 to N/A	2 to N/A		1.5 to N/A
Chromium						11.80	10.90
Chromium VI							
Cobalt							3.50
Copper						10.20	8.60
Cyanide						0.25 U	
Iron							10500.00
Lead						5.00	4.00
Magnesium							1980.00
Manganese							96.50
Mercury						0.05 U	0.05 U
Nickel						9.00	7.00
Potassium							650.00
Selenium						6.00 U	5.00 U
Silver						0.40 U	0.30 U
Sodium							849.00
Thallium						0.10 U	5.00 U
Vanadium							36.30
Zinc						23.80	26.80

Boeing Plant 2 CMS - Exceedances for SWMU 2-87.65

	Station ID:	SB-10403	SB-10403	SB-10404	SB-10404	SB-10404
	Sample ID:	W20-SB-10403-0060	W20-SB-10403-0105	W20-SB-10404-0015	W20-SB-10404-0065	W20-SB-10404-0105
Constituent	Depth (feet bgs):	6 to N/A	10.5 to N/A	1.5 to N/A	6.5 to N/A	10.5 to N/A
Pesticides/PCBs (ug/kg)						
Total PCB						
Total Petroleum Hydrocarbons (mg/kg)						
TPH by Washington HCID 8015						
Volatile Organic Compounds (ug/kg)						
1,1,1-Trichloroethane						
1,1,2,2-Tetrachloroethane						
1,1,2-Trichloroethane						
1,1,2-Trichlorotrifluoroethane						
1,1-Dichloroethane						
1,1-Dichloroethene						
1,2-Dichloroethane						
1,2-Dichloropropane						
2-Butanone						
2-Chloroethylvinylether						
2-Hexanone						
4-Methyl-2-Pentanone						
Acetone						
Benzene						
Bromodichloromethane						
Bromoform						
Bromomethane						
Carbon Disulfide						
Carbon Tetrachloride						
Chlorobenzene						
Chloroethane						

Boeing Plant 2 CMS - Exceedances for SWMU 2-87.65

Constituent	Station ID:	SB-10403	SB-10403	SB-10404	SB-10404	SB-10404
	Sample ID:	W20-SB-10403-0060	W20-SB-10403-0105	W20-SB-10404-0015	W20-SB-10404-0065	W20-SB-10404-0105
Depth (feet bgs):		6 to N/A	10.5 to N/A	1.5 to N/A	6.5 to N/A	10.5 to N/A
Chloroform						
Chloromethane						
cis-1,2-Dichloroethene						
cis-1,3-Dichloropropene						
Dibromochloromethane						
Ethylbenzene						
m,p-Xylene						
Methylene Chloride						
o-Xylene						
Styrene						
Tetrachloroethene						
Toluene						
Total Xylene						
trans-1,2-Dichloroethene						
trans-1,3-Dichloropropene						
Trichloroethene						
Trichlorofluoromethane						
Vinyl Acetate						
Vinyl Chloride						
Semi-Volatile Organic Compounds (ug/kg)						
1,2,4-Trichlorobenzene						
1,2-Dichlorobenzene						
1,3-Dichlorobenzene						
1,4-Dichlorobenzene						
2,2'-Oxybis(1-Chloropropane)						
2,4,5-Trichlorophenol						

Boeing Plant 2 CMS - Exceedances for SWMU 2-87.65

Constituent	Station ID:	SB-10403	SB-10403	SB-10404	SB-10404	SB-10404
	Sample ID:	W20-SB-10403-0060	W20-SB-10403-0105	W20-SB-10404-0015	W20-SB-10404-0065	W20-SB-10404-0105
Depth (feet bgs):		6 to N/A	10.5 to N/A	1.5 to N/A	6.5 to N/A	10.5 to N/A
2,4,6-Trichlorophenol						
2,4-Dichlorophenol						
2,4-Dimethylphenol						
2,4-Dinitrophenol						
2,4-Dinitrotoluene						
2,6-Dinitrotoluene						
2-Chloronaphthalene						
2-Chlorophenol						
2-Methylnaphthalene						
2-Methylphenol						
2-Nitroaniline						
2-Nitrophenol						
3,3'-Dichlorobenzidine						
3-Nitroaniline						
4,6-Dinitro-2-methylphenol						
4-Bromophenyl-phenylether						
4-Chloro-3-methylphenol						
4-Chloroaniline						
4-Chlorophenyl-phenylether						
4-Methylphenol						
4-Nitroaniline						
4-Nitrophenol						
Benzoic acid						
Benzyl alcohol						
bis(2-Chloroethoxy)methane						
bis(2-Chloroethyl)ether						
bis(2-Ethylhexyl)phthalate						

Boeing Plant 2 CMS - Exceedances for SWMU 2-87.65

Constituent	Station ID:	SB-10403	SB-10403	SB-10404	SB-10404	SB-10404
	Sample ID:	W20-SB-10403-0060	W20-SB-10403-0105	W20-SB-10404-0015	W20-SB-10404-0065	W20-SB-10404-0105
Depth (feet bgs):		6 to N/A	10.5 to N/A	1.5 to N/A	6.5 to N/A	10.5 to N/A
Butylbenzylphthalate						
Carbazole						
Di-n-butylphthalate						
Di-n-octylphthalate						
Dibenzofuran						
Diethylphthalate						
Dimethylphthalate						
Hexachlorobenzene						
Hexachlorobutadiene						
Hexachlorocyclopentadiene						
Hexachloroethane						
Isophorone						
N-Nitroso-di-n-propylamine						
N-Nitrosodiphenylamine						
Nitrobenzene						
Pentachlorophenol						
Phenol						
Naphthalene						
Acenaphthylene						
Acenaphthene						
Fluorene						
Phenanthrene						
Anthracene						
Fluoranthene						
Pyrene						
Benzo(a)anthracene						
Chrysene						

Boeing Plant 2 CMS - Exceedances for SWMU 2-87.65

	Station ID:	SB-10403	SB-10403	SB-10404	SB-10404	SB-10404
	Sample ID:	W20-SB-10403-0060	W20-SB-10403-0105	W20-SB-10404-0015	W20-SB-10404-0065	W20-SB-10404-0105
Constituent	Depth (feet bgs):	6 to N/A	10.5 to N/A	1.5 to N/A	6.5 to N/A	10.5 to N/A
Benzo(b)fluoranthene						
Benzo(k)fluoranthene						
Benzo(a)pyrene						
Indeno(1,2,3-cd)pyrene						
Dibenz(a,h)anthracene						
Benzo(g,h,i)perylene						
Pesticides/PCBs (ug/kg)						
Aroclor 1248						
Aroclor 1254						
Aroclor 1260						
Aroclor 1242						
Aroclor 1016						
Aroclor 1016/1242						
Total Petroleum Hydrocarbons (mg/kg)						
Diesel Range						
Gas Range						
Oil Range						
TPH by 418.1						
Inorganics (Total) (mg/kg)						
Aluminum		11400.00	10300.00	9420.00	11600.00	9710.00
Antimony		7.00 UJ	6.00 UJ	5.00 UJ	7.00 UJ	7.00 UJ
Arsenic		7.00 U	6.00 U	5.00 U	7.00 U	7.00 U
Barium		26.70	30.50	21.50	26.40	33.40
Beryllium		0.10	0.10 U	0.10	0.20	0.10 U
Cadmium		0.30 U	0.30 U	0.20 U	0.30 U	0.30 U
Calcium		5530.00	4520.00	4660.00	5560.00	4380.00

Boeing Plant 2 CMS - Exceedances for SWMU 2-87.65

Constituent	Station ID:	SB-10403	SB-10403	SB-10404	SB-10404	SB-10404
	Sample ID:	W20-SB-10403-0060	W20-SB-10403-0105	W20-SB-10404-0015	W20-SB-10404-0065	W20-SB-10404-0105
Depth (feet bgs):		6 to N/A	10.5 to N/A	1.5 to N/A	6.5 to N/A	10.5 to N/A
Chromium		12.70	13.30	19.50	12.90	10.60
Chromium VI						
Cobalt		4.10	4.40	3.30	4.20	4.20
Copper		11.20	10.40	7.50	10.40	9.20
Cyanide						
Iron		11600.00	13000.00	10100.00	11700.00	13000.00
Lead		4.00	4.00	3.00	5.00	3.00
Magnesium		2240.00	2070.00	1890.00	2240.00	2050.00
Manganese		92.80	122.00	86.90	96.60	121.00
Mercury		0.05 U	0.05 U	0.05 U	0.06 U	0.07 U
Nickel		9.00	9.00	7.00	9.00	8.00
Potassium		850.00	670.00	610.00	860.00	640.00
Selenium		7.00 U	6.00 U	5.00 U	7.00 U	7.00 U
Silver		0.40 U	0.40 U	0.30 U	0.40 U	0.40 U
Sodium		1150.00	979.00	919.00	1140.00	983.00
Thallium		7.00 U	6.00 U	5.00 U	7.00 U	7.00 U
Vanadium		41.30	46.40	35.80	41.00	39.40
Zinc		22.80	24.70	20.40	24.00	22.60

Boeing Plant 2 CMS - Exceedances for SWMU 77

Constituent	Station ID:	SB-08704	SB-08704	SB-08704	SB-08705	SB-08705	SB-08705
	Sample ID:	W20-SB-08704-0025	W20-SB-08704-0050	W20-SB-08704-0075	W20-SB-08705-0025	W20-SB-08705-0050	W20-SB-08705-0075
Depth (feet bgs):		2.5 to N/A	5 to N/A	7.5 to N/A	2.5 to N/A	5 to N/A	7.5 to N/A
Pesticides/PCBs (ug/kg)							
Total PCB		71.00 UT	86.00 UT	77.00 UT	73.00 UT	96.00 UT	88.00 UT
Aroclor 1248		71.00 U	86.00 U	77.00 U	73.00 U	96.00 U	88.00 U
Aroclor 1254		71.00 U	86.00 U	77.00 U	73.00 U	96.00 U	88.00 U
Aroclor 1260		71.00 U	86.00 U	77.00 U	73.00 U	96.00 U	88.00 U
Aroclor 1242							
Aroclor 1016							
Aroclor 1016/1242		71.00 U	86.00 U	77.00 U	73.00 U	96.00 U	88.00 U
Total Petroleum Hydrocarbons (mg/kg)							
Diesel Range							
Gas Range							
Oil Range							
Inorganics (Total) (mg/kg)							
Aluminum		8640.00	17500.00	9490.00	8990.00	14200.00	19000.00
Antimony		5.00 UJ	6.00 UJ	6.00 UJ	5.00 UJ	6.00 UJ	7.00 UJ
Arsenic		5.00 U	6.00 U	6.00 U	5.00 U	6.00 U	7.00 U
Barium		19.20	61.10	22.50	22.50	39.20	68.10
Beryllium		0.10 U	0.20	0.10	0.10	0.30	0.30
Cadmium		0.20 U	0.30 U	0.20 U	0.20 U	0.20 U	0.30 U
Calcium		3940.00	5390.00	4560.00	4750.00	6840.00	5520.00
Chromium		9.50	34.10	252.00	12.10	115.00	18.80
Chromium VI		0.21 UJH	0.27 UJH	0.23 UJH	0.22 UJH	0.28 UJH	0.28 UJH
Cobalt		3.50	6.50	3.80	3.70	5.60	6.60
Copper		6.90	16.30	9.30	8.30	19.50	21.60
Iron		9900.00	19300.00	10800.00	10400.00	15900.00	18500.00
Lead		3.00	3.00	2.00 U	2.00	7.00	5.00

Boeing Plant 2 CMS - Exceedances for SWMU 77

Constituent	Station ID:	SB-08704	SB-08704	SB-08704	SB-08705	SB-08705	SB-08705
	Sample ID:	W20-SB-08704-0025	W20-SB-08704-0050	W20-SB-08704-0075	W20-SB-08705-0025	W20-SB-08705-0050	W20-SB-08705-0075
	Depth (feet bgs):	2.5 to N/A	5 to N/A	7.5 to N/A	2.5 to N/A	5 to N/A	7.5 to N/A
Magnesium		1950.00	2940.00	2180.00	1880.00	3510.00	3490.00
Manganese		85.40	266.00	97.80	94.40	143.00	238.00
Mercury		0.05 U	0.06 U	0.05 U	0.05 U	0.06	0.05
Nickel		7.00	13.00	8.00	8.00	15.00	15.00
Potassium		690.00	810.00	720.00	550.00	1130.00	990.00
Selenium		5.00 U	6.00 U	6.00 U	5.00 U	6.00 U	7.00 U
Silver		0.30 U	0.40 U	0.30 U	0.30 U	0.40 U	0.40 U
Sodium		1000.00	2610.00	1050.00	847.00	1170.00	1640.00
Thallium		5.00 U	6.00 U	6.00 U	5.00 U	6.00 U	7.00 U
Vanadium		33.90	47.10	36.50	36.40	47.40	53.40
Zinc		19.50	26.00	25.70	20.50	34.00	33.30

Boeing Plant 2 CMS - Exceedances for SWMU 77

	Station ID:	SB-08706	SB-08706	SB-08706	SB-08709	SB-08709	SB-08709
	Sample ID:	W20-SB-08706-0075	W20-SB-08706-0100	W20-SB-08706-0125	SB-08709-0060	SB-08709-0070	SB-08709-0105
Constituent	Depth (feet bgs):	7.5 to N/A	10 to N/A	12.5 to N/A	6 to N/A	7 to N/A	10.5 to N/A
Pesticides/PCBs (ug/kg)							
Total PCB		84.00 UT	87.00 UT	87.00 UT	45.00 UT	56.00 UT	43.00 UT
Aroclor 1248		84.00 UJH	87.00 U	87.00 UJH	45.00 U	56.00 U	43.00 U
Aroclor 1254		84.00 UJH	87.00 U	87.00 UJH	45.00 U	56.00 U	43.00 U
Aroclor 1260		84.00 UJH	87.00 U	87.00 UJH	45.00 U	56.00 U	43.00 U
Aroclor 1242					45.00 U	56.00 U	43.00 U
Aroclor 1016					45.00 U	56.00 U	43.00 U
Aroclor 1016/1242		84.00 UJH	87.00 U	87.00 UJH			
Total Petroleum Hydrocarbons (mg/kg)							
Diesel Range							
Gas Range							
Oil Range							
Inorganics (Total) (mg/kg)							
Aluminum		11900.00	11100.00	14000.00			
Antimony		6.00 UJ	6.00 UJ	7.00 UJ			
Arsenic		6.00 U	6.00 U	7.00 U			
Barium		40.90	36.30	46.90			
Beryllium		0.20	0.20	0.20			
Cadmium		0.20 U	0.30 U	0.30 U			
Calcium		4270.00	4530.00	5620.00			
Chromium		14.90	14.30	15.80			
Chromium VI		0.25 U	0.26 U	0.28 U			
Cobalt		5.40	4.90	5.40			
Copper		14.90	11.50	15.80			
Iron		13900.00	12900.00	11900.00			
Lead		5.00	4.00	6.00			

Boeing Plant 2 CMS - Exceedances for SWMU 77

Constituent	Station ID:	SB-08706	SB-08706	SB-08706	SB-08709	SB-08709	SB-08709
	Sample ID:	W20-SB-08706-0075	W20-SB-08706-0100	W20-SB-08706-0125	SB-08709-0060	SB-08709-0070	SB-08709-0105
	Depth (feet bgs):	7.5 to N/A	10 to N/A	12.5 to N/A	6 to N/A	7 to N/A	10.5 to N/A
Magnesium		2670.00	2180.00	2770.00			
Manganese		143.00	161.00	140.00			
Mercury		0.05 U	0.06 U	0.07 U			
Nickel		10.00	9.00	10.00			
Potassium		860.00	760.00	830.00			
Selenium		6.00 U	6.00 U	7.00 U			
Silver		0.40 U	0.40 U	0.40 U			
Sodium		858.00	990.00	1310.00			
Thallium		6.00 U	6.00 U	7.00 U			
Vanadium		46.40	46.40	50.80			
Zinc		25.50	23.50	28.10			

Boeing Plant 2 CMS - Exceedances for SWMU 77

Station ID:		SB-08712	SB-08712	SB-08712	SB-11001	SB-11001	SB-11001
Sample ID:		SB-08712-0020	SB-08712-0065	SB-08712-0085	W20-SB-11001-0015	W20-SB-11001-0060	W20-SB-11001-0095
Constituent	Depth (feet bgs):	2 to N/A	6.5 to N/A	8.5 to N/A	1.5 to N/A	6 to N/A	9.5 to N/A
Pesticides/PCBs (ug/kg)							
Total PCB		36.00 UT	47.00 UT	46.00 UT	70.00 UT	90.00 UT	90.00 UT
Aroclor 1248		36.00 U	47.00 U	46.00 U	70.00 U	90.00 U	90.00 U
Aroclor 1254		36.00 U	47.00 U	46.00 U	70.00 U	90.00 U	90.00 U
Aroclor 1260		36.00 U	47.00 U	46.00 U	70.00 U	90.00 U	90.00 U
Aroclor 1242		36.00 U	47.00 U	46.00 U			
Aroclor 1016		36.00 U	47.00 U	46.00 U			
Aroclor 1016/1242					70.00 U	90.00 U	90.00 U
Total Petroleum Hydrocarbons (mg/kg)							
Diesel Range					25.00 U	25.00 U	25.00 U
Gas Range					20.00 U	20.00 U	20.00 U
Oil Range					50.00 U	50.00 U	50.00 U
Inorganics (Total) (mg/kg)							
Aluminum							
Antimony							
Arsenic							
Barium							
Beryllium							
Cadmium							
Calcium							
Chromium							
Chromium VI							
Cobalt							
Copper							
Iron							
Lead							

Boeing Plant 2 CMS - Exceedances for SWMU 77

		Station ID:	SB-08712	SB-08712	SB-08712	SB-11001	SB-11001	SB-11001
		Sample ID:	SB-08712-0020	SB-08712-0065	SB-08712-0085	W20-SB-11001-0015	W20-SB-11001-0060	W20-SB-11001-0095
Constituent	Depth (feet bgs):		2 to N/A	6.5 to N/A	8.5 to N/A	1.5 to N/A	6 to N/A	9.5 to N/A
Magnesium								
Manganese								
Mercury								
Nickel								
Potassium								
Selenium								
Silver								
Sodium								
Thallium								
Vanadium								
Zinc								

Boeing Plant 2 CMS - Exceedances for SWMU 77

	Station ID:	SB-11001
	Sample ID:	W20-SB-11001-1095
Constituent	Depth (feet bgs):	9.5 to N/A
Pesticides/PCBs (ug/kg)		
Total PCB		
Aroclor 1248		
Aroclor 1254		
Aroclor 1260		
Aroclor 1242		
Aroclor 1016		
Aroclor 1016/1242		
Total Petroleum Hydrocarbons (mg/kg)		
Diesel Range	25.00 U	
Gas Range	20.00 U	
Oil Range	50.00 U	
Inorganics (Total) (mg/kg)		
Aluminum		
Antimony		
Arsenic		
Barium		
Beryllium		
Cadmium		
Calcium		
Chromium		
Chromium VI		
Cobalt		
Copper		
Iron		
Lead		

Boeing Plant 2 CMS - Exceedances for SWMU 77

		Station ID:	SB-11001
		Sample ID:	W20-SB-11001-1095
Constituent	Depth (feet bgs):	9.5 to N/A	
Magnesium			
Manganese			
Mercury			
Nickel			
Potassium			
Selenium			
Silver			
Sodium			
Thallium			
Vanadium			
Zinc			

Boeing Plant 2 CMS - Exceedances for OA 16

Station ID:	NS-01-104	NS-02-104	SB-10402	SB-10403	SB-10403	SB-10403
Sample ID:	W15-W1-NS-01	W15-W1-NS-02	W15-SB-10402-0080	W20-SB-10403-0015	W20-SB-10403-0060	W20-SB-10403-0105
Constituent	Depth (feet bgs):			1.5 to N/A	6 to N/A	10.5 to N/A
Pesticides/PCBs (ug/kg)						
Total PCB		300.00 UT	62.00 UT	90.00 UT		
Volatile Organic Compounds (ug/kg)						
1,1,1-Trichloroethane		120.00 U	1.10 U	6.70		
1,1,2,2-Tetrachloroethane		120.00 U	1.10 U	1.40 U		
1,1,2-Trichloroethane		120.00 U	1.10 U	3.70		
1,1,2-Trichlorotrifluoroethane		250.00 U	2.20 U	2.80 U		
1,1-Dichloroethane		120.00 U	1.10 U	210.00		
1,1-Dichloroethene		120.00 U	1.10 U	12.00		
1,2-Dichloroethane		120.00 U	1.10 U	8.10		
1,2-Dichloropropane		120.00 U	1.10 U	1.40 U		
2-Butanone		2300.00 UB	5.40 U	12.00 UB		
2-Chloroethylvinylether		620.00 U	5.40 U	7.00 U		
2-Hexanone		620.00 U	5.40 U	7.00 U		
4-Methyl-2-Pentanone		620.00 U	5.40 U	7.00 U		
Acetone		620.00 U	7.90	54.00		
Benzene		120.00 U	1.10 U	1.40		
Bromodichloromethane		120.00 U	1.10 U	1.40 U		
Bromoform		120.00 U	1.10 U	1.40 U		
Bromomethane		250.00 U	2.20 U	2.80 U		
Carbon Disulfide		120.00 U	1.10 U	1.70		
Carbon Tetrachloride		120.00 U	1.10 U	1.40 U		
Chlorobenzene		120.00 U	1.10 U	1.40 U		
Chloroethane		250.00 U	2.20 U	2.80 U		
Chloroform		120.00 U	1.10 U	1.40 U		
Chloromethane		250.00 U	2.20 U	2.80 U		

Boeing Plant 2 CMS - Exceedances for OA 16

Constituent	Station ID:	NS-01-104	NS-02-104	SB-10402	SB-10403	SB-10403	SB-10403
	Sample ID:	W15-W1-NS-01	W15-W1-NS-02	W15-SB-10402-0080	W20-SB-10403-0015	W20-SB-10403-0060	W20-SB-10403-0105
Depth (feet bgs):					1.5 to N/A	6 to N/A	10.5 to N/A
cis-1,2-Dichloroethene		120.00 U	1.10 U	530.00 D			
cis-1,3-Dichloropropene		120.00 U	1.10 U	1.40 U			
Dibromochloromethane		120.00 U	1.10 U	1.40 U			
Ethylbenzene		120.00 U	1.10 U	1.40 U			
Methylene Chloride		250.00 U	2.20 U	2.80 U			
Styrene		120.00 U	1.10 U	1.40 U			
Tetrachloroethene		120.00 U	1.10 U	170.00			
Toluene		120.00 U	1.10 U	10.00			
Total Xylene		250.00 U	2.20 U	2.80 U			
trans-1,2-Dichloroethene		120.00 U	1.10 U	37.00			
trans-1,3-Dichloropropene		120.00 U	1.10 U	1.40 U			
Trichloroethene		120.00 U	4.60	5900.00 D			
Trichlorofluoromethane		250.00 U	2.20 U	2.80 U			
Vinyl Acetate		620.00 U	5.40 U	7.00 U			
Vinyl Chloride		250.00 U	2.20 U	2.80 U			
Semi-Volatile Organic Compounds (ug/kg)							
1,2,4-Trichlorobenzene		69.00 U	62.00 U	90.00 U			
1,2-Dichlorobenzene		69.00 U	62.00 U	90.00 U			
1,3-Dichlorobenzene		69.00 U	62.00 U	90.00 U			
1,4-Dichlorobenzene		69.00 U	62.00 U	90.00 U			
2,2'-Oxybis(1-Chloropropane)		69.00 U	62.00 U	90.00 U			
2,4,5-Trichlorophenol		350.00 U	310.00 U	450.00 U			
2,4,6-Trichlorophenol		350.00 U	310.00 U	450.00 U			
2,4-Dichlorophenol		210.00 U	190.00 U	270.00 U			
2,4-Dimethylphenol		140.00 U	120.00 U	180.00 U			
2,4-Dinitrophenol		690.00 U	620.00 U	900.00 U			

Boeing Plant 2 CMS - Exceedances for OA 16

Constituent	Station ID:	NS-01-104	NS-02-104	SB-10402	SB-10403	SB-10403	SB-10403
	Sample ID:	W15-W1-NS-01	W15-W1-NS-02	W15-SB-10402-0080	W20-SB-10403-0015	W20-SB-10403-0060	W20-SB-10403-0105
Depth (feet bgs):					1.5 to N/A	6 to N/A	10.5 to N/A
2,4-Dinitrotoluene		350.00 U	310.00 U	450.00 U			
2,6-Dinitrotoluene		350.00 U	310.00 U	450.00 U			
2-Chloronaphthalene		69.00 U	62.00 U	90.00 U			
2-Chlorophenol		69.00 U	62.00 U	90.00 U			
2-Methylnaphthalene		69.00 U	62.00 U	90.00 U			
2-Methylphenol		69.00 U	62.00 U	90.00 U			
2-Nitroaniline		350.00 U	310.00 U	450.00 U			
2-Nitrophenol		350.00 U	310.00 U	450.00 U			
3,3'-Dichlorobenzidine		350.00 U	310.00 U	450.00 U			
3-Nitroaniline		350.00 U	310.00 U	450.00 U			
4,6-Dinitro-2-methylphenol		690.00 U	620.00 U	900.00 U			
4-Bromophenyl-phenylether		69.00 U	62.00 U	90.00 U			
4-Chloro-3-methylphenol		140.00 U	120.00 U	180.00 U			
4-Chloroaniline		210.00 U	190.00 U	270.00 U			
4-Chlorophenyl-phenylether		69.00 U	62.00 U	90.00 U			
4-Methylphenol		69.00 U	62.00 U	90.00 U			
4-Nitroaniline		350.00 U	310.00 U	450.00 U			
4-Nitrophenol		350.00 U	310.00 U	450.00 U			
Benzoic acid		690.00 U	620.00 U	900.00 U			
Benzyl alcohol		350.00 U	310.00 U	450.00 U			
bis(2-Chloroethoxy)methane		69.00 U	62.00 U	90.00 U			
bis(2-Chloroethyl)ether		69.00 U	62.00 U	90.00 U			
bis(2-Ethylhexyl)phthalate		650.00	62.00 U	90.00 U			
Butylbenzylphthalate		69.00 U	62.00 U	90.00 U			
Carbazole		69.00 U	62.00 U	90.00 U			
Di-n-butylphthalate		69.00 U	62.00 U	90.00 U			
Di-n-octylphthalate		69.00 U	62.00 U	90.00 U			

Boeing Plant 2 CMS - Exceedances for OA 16

Constituent	Station ID:	NS-01-104	NS-02-104	SB-10402	SB-10403	SB-10403	SB-10403
	Sample ID:	W15-W1-NS-01	W15-W1-NS-02	W15-SB-10402-0080	W20-SB-10403-0015	W20-SB-10403-0060	W20-SB-10403-0105
Depth (feet bgs):					1.5 to N/A	6 to N/A	10.5 to N/A
Dibenzofuran		69.00 U	62.00 U	90.00 U			
Diethylphthalate		69.00 U	62.00 U	90.00 U			
Dimethylphthalate		160.00	62.00 U	90.00 U			
Hexachlorobenzene		69.00 U	62.00 U	90.00 U			
Hexachlorobutadiene		140.00 U	120.00 U	180.00 U			
Hexachlorocyclopentadiene		350.00 U	310.00 U	450.00 U			
Hexachloroethane		140.00 U	120.00 U	180.00 U			
Isophorone		69.00 U	62.00 U	90.00 U			
N-Nitroso-di-n-propylamine		69.00 U	62.00 U	90.00 U			
N-Nitrosodiphenylamine		69.00 U	62.00 U	90.00 U			
Nitrobenzene		69.00 U	62.00 U	90.00 U			
Pentachlorophenol		350.00 U	310.00 U	450.00 U			
Phenol		140.00 U	120.00 U	180.00 U			
Naphthalene		69.00 U	62.00 U	90.00 U			
Acenaphthylene		69.00 U	62.00 U	90.00 U			
Acenaphthene		69.00 U	62.00 U	90.00 U			
Fluorene		69.00 U	62.00 U	90.00 U			
Phenanthrene		69.00 U	62.00 U	90.00 U			
Anthracene		69.00 U	62.00 U	90.00 U			
Fluoranthene		69.00 U	62.00 U	90.00 U			
Pyrene		69.00 U	62.00 U	90.00 U			
Benzo(a)anthracene		69.00 U	62.00 U	90.00 U			
Chrysene		69.00 U	62.00 U	90.00 U			
Benzo(b)fluoranthene		69.00 U	62.00 U	90.00 U			
Benzo(k)fluoranthene		69.00 U	62.00 U	90.00 U			
Benzo(a)pyrene		69.00 U	62.00 U	90.00 U			
Indeno(1,2,3-cd)pyrene		69.00 U	62.00 U	90.00 U			

Boeing Plant 2 CMS - Exceedances for OA 16

Station ID:	NS-01-104	NS-02-104	SB-10402	SB-10403	SB-10403	SB-10403
Sample ID:	W15-W1-NS-01	W15-W1-NS-02	W15-SB-10402-0080	W20-SB-10403-0015	W20-SB-10403-0060	W20-SB-10403-0105
Constituent	Depth (feet bgs):			1.5 to N/A	6 to N/A	10.5 to N/A
Dibenz(a,h)anthracene		69.00 U	62.00 U	90.00 U		
Benzo(g,h,i)perylene		69.00 U	62.00 U	90.00 U		
Pesticides/PCBs (ug/kg)						
Aroclor 1248		160.00 UI	62.00 U	90.00 U		
Aroclor 1254		90.00 UI	62.00 U	90.00 U		
Aroclor 1260		69.00 U	62.00 U	90.00 U		
Aroclor 1016/1242		300.00 UI	62.00 U	90.00 U		
Inorganics (Total) (mg/kg)						
Aluminum				9270.00	11400.00	10300.00
Antimony		6.00	5.00 U	6.00 U	5.00 UJ	7.00 UJ
Arsenic		5.00 U	5.00 U	6.00 U	5.00 U	7.00 U
Barium		22.70	21.80	66.10	24.20	26.70
Beryllium		0.10	0.10	0.40	0.10	0.10
Cadmium		198.00	240.00	0.40	0.20 U	0.30 U
Calcium				5190.00	5530.00	4520.00
Chromium		14.20	75.90	28.20	10.90	12.70
Cobalt				3.50	4.10	4.40
Copper		3430.00	4350.00	42.50	8.60	11.20
Cyanide		0.20 U	5.50	0.22 U		
Iron				10500.00	11600.00	13000.00
Lead		11.00	4.00	19.00	4.00	4.00
Magnesium				1980.00	2240.00	2070.00
Manganese				96.50	92.80	122.00
Mercury		0.04 U	0.05 U	0.11	0.05 U	0.05 U
Nickel		11.00	8.00	22.00	7.00	9.00
Potassium				650.00	850.00	670.00

Boeing Plant 2 CMS - Exceedances for OA 16

Constituent	Station ID:	NS-01-104	NS-02-104	SB-10402	SB-10403	SB-10403	SB-10403
	Sample ID:	W15-W1-NS-01	W15-W1-NS-02	W15-SB-10402-0080	W20-SB-10403-0015	W20-SB-10403-0060	W20-SB-10403-0105
Depth (feet bgs):					1.5 to N/A	6 to N/A	10.5 to N/A
Selenium		5.00 U	5.00 U	6.00 U	5.00 U	7.00 U	6.00 U
Silver		0.30 U	0.30 U	0.40	0.30 U	0.40 U	0.40 U
Sodium					849.00	1150.00	979.00
Thallium		0.10	0.10 U	0.60 U	5.00 U	7.00 U	6.00 U
Vanadium					36.30	41.30	46.40
Zinc		49.00	83.60	54.50	26.80	22.80	24.70

Boeing Plant 2 CMS - Exceedances for OA 16

	Station ID:	SB-10404	SB-10404	SB-10404	SB-10405	SB-10405	SB-10405
	Sample ID:	W20-SB-10404-0015	W20-SB-10404-0065	W20-SB-10404-0105	W20-SB-10405-0015	W20-SB-10405-0065	W20-SB-10405-0105
Constituent	Depth (feet bgs):	1.5 to N/A	6.5 to N/A	10.5 to N/A	1.5 to N/A	6.5 to N/A	10.5 to N/A
Pesticides/PCBs (ug/kg)							
Total PCB							
Volatile Organic Compounds (ug/kg)							
1,1,1-Trichloroethane							
1,1,2,2-Tetrachloroethane							
1,1,2-Trichloroethane							
1,1,2-Trichlorotrifluoroethane							
1,1-Dichloroethane							
1,1-Dichloroethene							
1,2-Dichloroethane							
1,2-Dichloropropane							
2-Butanone							
2-Chloroethylvinylether							
2-Hexanone							
4-Methyl-2-Pentanone							
Acetone							
Benzene							
Bromodichloromethane							
Bromoform							
Bromomethane							
Carbon Disulfide							
Carbon Tetrachloride							
Chlorobenzene							
Chloroethane							
Chloroform							
Chloromethane							

Boeing Plant 2 CMS - Exceedances for OA 16

Constituent	Station ID:	SB-10404	SB-10404	SB-10404	SB-10405	SB-10405	SB-10405
	Sample ID:	W20-SB-10404-0015	W20-SB-10404-0065	W20-SB-10404-0105	W20-SB-10405-0015	W20-SB-10405-0065	W20-SB-10405-0105
Depth (feet bgs):		1.5 to N/A	6.5 to N/A	10.5 to N/A	1.5 to N/A	6.5 to N/A	10.5 to N/A
cis-1,2-Dichloroethene							
cis-1,3-Dichloropropene							
Dibromochloromethane							
Ethylbenzene							
Methylene Chloride							
Styrene							
Tetrachloroethene							
Toluene							
Total Xylene							
trans-1,2-Dichloroethene							
trans-1,3-Dichloropropene							
Trichloroethene							
Trichlorofluoromethane							
Vinyl Acetate							
Vinyl Chloride							
Semi-Volatile Organic Compounds (ug/kg)							
1,2,4-Trichlorobenzene							
1,2-Dichlorobenzene							
1,3-Dichlorobenzene							
1,4-Dichlorobenzene							
2,2'-Oxybis(1-Chloropropane)							
2,4,5-Trichlorophenol							
2,4,6-Trichlorophenol							
2,4-Dichlorophenol							
2,4-Dimethylphenol							
2,4-Dinitrophenol							

Boeing Plant 2 CMS - Exceedances for OA 16

Constituent	Station ID:	SB-10404	SB-10404	SB-10404	SB-10405	SB-10405	SB-10405
	Sample ID:	W20-SB-10404-0015	W20-SB-10404-0065	W20-SB-10404-0105	W20-SB-10405-0015	W20-SB-10405-0065	W20-SB-10405-0105
Depth (feet bgs):		1.5 to N/A	6.5 to N/A	10.5 to N/A	1.5 to N/A	6.5 to N/A	10.5 to N/A
2,4-Dinitrotoluene							
2,6-Dinitrotoluene							
2-Chloronaphthalene							
2-Chlorophenol							
2-Methylnaphthalene							
2-Methylphenol							
2-Nitroaniline							
2-Nitrophenol							
3,3'-Dichlorobenzidine							
3-Nitroaniline							
4,6-Dinitro-2-methylphenol							
4-Bromophenyl-phenylether							
4-Chloro-3-methylphenol							
4-Chloroaniline							
4-Chlorophenyl-phenylether							
4-Methylphenol							
4-Nitroaniline							
4-Nitrophenol							
Benzoic acid							
Benzyl alcohol							
bis(2-Chloroethoxy)methane							
bis(2-Chloroethyl)ether							
bis(2-Ethylhexyl)phthalate							
Butylbenzylphthalate							
Carbazole							
Di-n-butylphthalate							
Di-n-octylphthalate							

Boeing Plant 2 CMS - Exceedances for OA 16

Constituent	Station ID:	SB-10404	SB-10404	SB-10404	SB-10405	SB-10405	SB-10405
	Sample ID:	W20-SB-10404-0015	W20-SB-10404-0065	W20-SB-10404-0105	W20-SB-10405-0015	W20-SB-10405-0065	W20-SB-10405-0105
Depth (feet bgs):		1.5 to N/A	6.5 to N/A	10.5 to N/A	1.5 to N/A	6.5 to N/A	10.5 to N/A
Dibenzofuran							
Diethylphthalate							
Dimethylphthalate							
Hexachlorobenzene							
Hexachlorobutadiene							
Hexachlorocyclopentadiene							
Hexachloroethane							
Isophorone							
N-Nitroso-di-n-propylamine							
N-Nitrosodiphenylamine							
Nitrobenzene							
Pentachlorophenol							
Phenol							
Naphthalene							
Acenaphthylene							
Acenaphthene							
Fluorene							
Phenanthrene							
Anthracene							
Fluoranthene							
Pyrene							
Benzo(a)anthracene							
Chrysene							
Benzo(b)fluoranthene							
Benzo(k)fluoranthene							
Benzo(a)pyrene							
Indeno(1,2,3-cd)pyrene							

Boeing Plant 2 CMS - Exceedances for OA 16

	Station ID:	SB-10404	SB-10404	SB-10404	SB-10405	SB-10405	SB-10405
	Sample ID:	W20-SB-10404-0015	W20-SB-10404-0065	W20-SB-10404-0105	W20-SB-10405-0015	W20-SB-10405-0065	W20-SB-10405-0105
Constituent	Depth (feet bgs):	1.5 to N/A	6.5 to N/A	10.5 to N/A	1.5 to N/A	6.5 to N/A	10.5 to N/A
Dibenz(a,h)anthracene							
Benzo(g,h,i)perylene							
Pesticides/PCBs (ug/kg)							
Aroclor 1248							
Aroclor 1254							
Aroclor 1260							
Aroclor 1016/1242							
Inorganics (Total) (mg/kg)							
Aluminum		9420.00	11600.00	9710.00	9990.00	17300.00	20600.00
Antimony		5.00 UJ	7.00 UJ	7.00 UJ	5.00 UJ	7.00 UJ	7.00 UJ
Arsenic		5.00 U	7.00 U	7.00 U	5.00 U	7.00	7.00 U
Barium		21.50	26.40	33.40	23.60	46.30	81.90
Beryllium		0.10	0.20	0.10 U	0.10	0.30	0.40
Cadmium		0.20 U	0.30 U	0.30 U	0.20 U	0.30 U	0.30 U
Calcium		4660.00	5560.00	4380.00	5220.00	6990.00	5580.00
Chromium		19.50	12.90	10.60	12.10	20.50	19.20
Cobalt		3.30	4.20	4.20	3.60	7.00	8.70
Copper		7.50	10.40	9.20	9.00	26.30	25.40
Cyanide							
Iron		10100.00	11700.00	13000.00	11100.00	20800.00	20700.00
Lead		3.00	5.00	3.00	3.00	14.00	6.00
Magnesium		1890.00	2240.00	2050.00	2040.00	4030.00	4090.00
Manganese		86.90	96.60	121.00	94.80	169.00	417.00
Mercury		0.05 U	0.06 U	0.07 U	0.05 U	0.09	0.06 U
Nickel		7.00	9.00	8.00	8.00	16.00	15.00
Potassium		610.00	860.00	640.00	730.00	1490.00	1300.00

Boeing Plant 2 CMS - Exceedances for OA 16

Constituent	Station ID:	SB-10404	SB-10404	SB-10404	SB-10405	SB-10405	SB-10405
	Sample ID:	W20-SB-10404-0015	W20-SB-10404-0065	W20-SB-10404-0105	W20-SB-10405-0015	W20-SB-10405-0065	W20-SB-10405-0105
Depth (feet bgs):		1.5 to N/A	6.5 to N/A	10.5 to N/A	1.5 to N/A	6.5 to N/A	10.5 to N/A
Selenium		5.00 U	7.00 U	7.00 U	5.00 U	7.00 U	7.00 U
Silver		0.30 U	0.40 U	0.40 U	0.30 U	0.40 U	0.40 U
Sodium		919.00	1140.00	983.00	984.00	1260.00	1350.00
Thallium		5.00 U	7.00 U	7.00 U	5.00 U	7.00 U	7.00 U
Vanadium		35.80	41.00	39.40	41.10	53.60	58.40
Zinc		20.40	24.00	22.60	24.90	44.40	39.30

Boeing Plant 2 CMS - Exceedances for OA 16

	Station ID:	SB-10405
	Sample ID:	W20-SB-10405-1015
Constituent	Depth (feet bgs):	1.5 to N/A
Pesticides/PCBs (ug/kg)		
Total PCB		
Volatile Organic Compounds (ug/kg)		
1,1,1-Trichloroethane		
1,1,2,2-Tetrachloroethane		
1,1,2-Trichloroethane		
1,1,2-Trichlorotrifluoroethane		
1,1-Dichloroethane		
1,1-Dichloroethene		
1,2-Dichloroethane		
1,2-Dichloropropane		
2-Butanone		
2-Chloroethylvinylether		
2-Hexanone		
4-Methyl-2-Pentanone		
Acetone		
Benzene		
Bromodichloromethane		
Bromoform		
Bromomethane		
Carbon Disulfide		
Carbon Tetrachloride		
Chlorobenzene		
Chloroethane		
Chloroform		
Chloromethane		

Boeing Plant 2 CMS - Exceedances for OA 16

	Station ID:	SB-10405
	Sample ID:	W20-SB-10405-1015
Constituent	Depth (feet bgs):	1.5 to N/A
cis-1,2-Dichloroethene		
cis-1,3-Dichloropropene		
Dibromochloromethane		
Ethylbenzene		
Methylene Chloride		
Styrene		
Tetrachloroethene		
Toluene		
Total Xylene		
trans-1,2-Dichloroethene		
trans-1,3-Dichloropropene		
Trichloroethene		
Trichlorofluoromethane		
Vinyl Acetate		
Vinyl Chloride		
Semi-Volatile Organic Compounds (ug/kg)		
1,2,4-Trichlorobenzene		
1,2-Dichlorobenzene		
1,3-Dichlorobenzene		
1,4-Dichlorobenzene		
2,2'-Oxybis(1-Chloropropane)		
2,4,5-Trichlorophenol		
2,4,6-Trichlorophenol		
2,4-Dichlorophenol		
2,4-Dimethylphenol		
2,4-Dinitrophenol		

Boeing Plant 2 CMS - Exceedances for OA 16

		Station ID:	SB-10405
		Sample ID:	W20-SB-10405-1015
Constituent	Depth (feet bgs):	1.5 to N/A	
2,4-Dinitrotoluene			
2,6-Dinitrotoluene			
2-Chloronaphthalene			
2-Chlorophenol			
2-Methylnaphthalene			
2-Methylphenol			
2-Nitroaniline			
2-Nitrophenol			
3,3'-Dichlorobenzidine			
3-Nitroaniline			
4,6-Dinitro-2-methylphenol			
4-Bromophenyl-phenylether			
4-Chloro-3-methylphenol			
4-Chloroaniline			
4-Chlorophenyl-phenylether			
4-Methylphenol			
4-Nitroaniline			
4-Nitrophenol			
Benzoic acid			
Benzyl alcohol			
bis(2-Chloroethoxy)methane			
bis(2-Chloroethyl)ether			
bis(2-Ethylhexyl)phthalate			
Butylbenzylphthalate			
Carbazole			
Di-n-butylphthalate			
Di-n-octylphthalate			

Boeing Plant 2 CMS - Exceedances for OA 16

		Station ID:	SB-10405
		Sample ID:	W20-SB-10405-1015
Constituent	Depth (feet bgs):	1.5 to N/A	
Dibenzofuran			
Diethylphthalate			
Dimethylphthalate			
Hexachlorobenzene			
Hexachlorobutadiene			
Hexachlorocyclopentadiene			
Hexachloroethane			
Isophorone			
N-Nitroso-di-n-propylamine			
N-Nitrosodiphenylamine			
Nitrobenzene			
Pentachlorophenol			
Phenol			
Naphthalene			
Acenaphthylene			
Acenaphthene			
Fluorene			
Phenanthrene			
Anthracene			
Fluoranthene			
Pyrene			
Benzo(a)anthracene			
Chrysene			
Benzo(b)fluoranthene			
Benzo(k)fluoranthene			
Benzo(a)pyrene			
Indeno(1,2,3-cd)pyrene			

Boeing Plant 2 CMS - Exceedances for OA 16

Station ID:		SB-10405
Sample ID:		W20-SB-10405-1015
Constituent	Depth (feet bgs):	1.5 to N/A
Dibenz(a,h)anthracene		
Benzo(g,h,i)perylene		
Pesticides/PCBs (ug/kg)		
Aroclor 1248		
Aroclor 1254		
Aroclor 1260		
Aroclor 1016/1242		
Inorganics (Total) (mg/kg)		
Aluminum		9870.00
Antimony		5.00 UJ
Arsenic		5.00 U
Barium		24.10
Beryllium		0.20
Cadmium		0.20 U
Calcium		5430.00
Chromium		12.70
Cobalt		3.50
Copper		11.60
Cyanide		
Iron		10900.00
Lead		3.00
Magnesium		2010.00
Manganese		92.90
Mercury		0.05 U
Nickel		9.00
Potassium		710.00

Boeing Plant 2 CMS - Exceedances for OA 16

Station ID:		SB-10405
Sample ID:		W20-SB-10405-1015
Constituent	Depth (feet bgs):	1.5 to N/A
Selenium		5.00 U
Silver		0.30 U
Sodium		994.00
Thallium		5.00 U
Vanadium		40.60
Zinc		24.00

APPENDIX B
CONFIRMATORY SAMPLING PLAN

APPENDIX B
SWMU 2-87.65, 77, 78.B, AND OA 16
CONFIRMATORY SAMPLING PLAN

BOEING—PLANT 2
SEATTLE, WASHINGTON

B.1 INTRODUCTION

This Field Sampling Plan (FSP) has been prepared in accordance with WAC 173-340-820 as a field guide for conducting soil sampling in support of the remedial actions at the former Solid Waste Management Units (SWMUs) 2-87.65, 77, 78.B, and OA 16. The plan covers:

- Confirmatory soil sampling to verify cleanup has been achieved. .

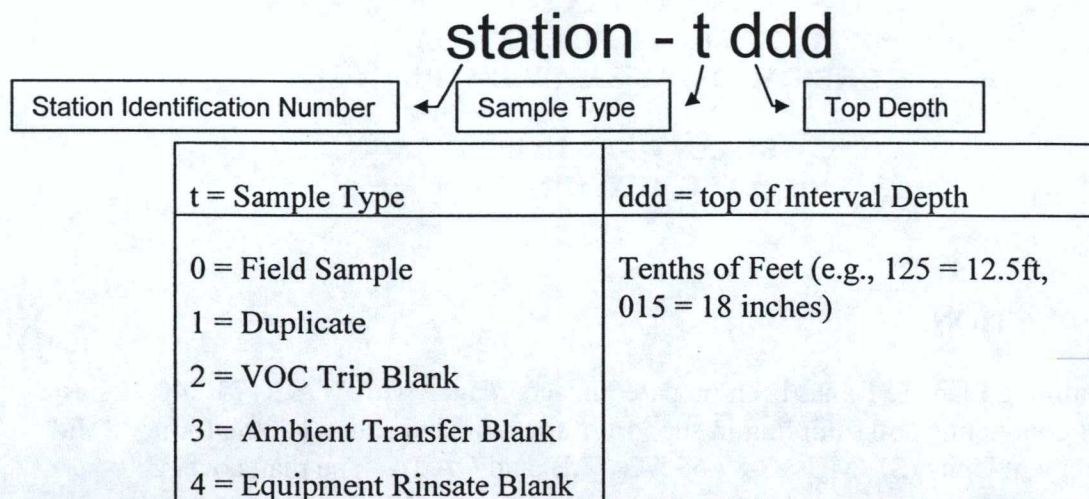
Field procedures are described in Section 2 of this plan. Section 3 describes the methodology.

B.2 PROCEDURES

The procedures to be followed are designed to ensure that the resulting data are representative of conditions in the field, capable of supporting sound remedial decisions, and legally defensible. Samples will be assigned a sample designator as outlined in Section B.2.1, sample stations will be located as provided in Section B.2.2, field and sampling equipment will be decontaminated before and during use as indicated in Section B.2.3, samples will be handled as provided in Section B.2.4 and field activities will be documented per Section B.2.10. Field quality control (QC) and waste management are covered in Sections B.2.11 and B.2.12, respectively.

B.2.1 Sample Designation

For tracking and data management, samples will be assigned a unique 20-character alphanumeric identifier according to the method described in this section. The numbering system will be used to identify each sample collected; to facilitate tracking, retrieval, and data processing; and to maintain relationships between samples. The sample designation scheme is illustrated as follows and defined in the following table.



Each sample number consists of two components separated by a dash (-) that correspond to the location identification and sample type/depth, as described below:

Station —A five-character alphanumeric designation to identify the geographic sample location and station number according to the project area sampling station map:

SB - Soil Boring

Sample Type/Depth —A four-character numeric designation, consisting of a number to indicate sample type:

0###	-	Field sample (No QA/QC)
1###	-	Field duplicate
2###	-	VOC trip blank
3###	-	Ambient field blank
4###	-	Equipment rinsate blank

and a three-character field to indicate sample depth in tenths of feet:

#010	-	1 foot
#050	-	5 feet
#125	-	12.5 feet

Sample depth determinations will be made to the nearest 0.5 foot. The three-character field is a component of the four-character numeric designation.

If a sample is not being collected for QA/QC purposes and does not have an associated depth (e.g., surface soil sample, groundwater sample), the characters of the third component will default to "0000." The third component will be retained in order to accommodate a field duplicate sample.

VOC trip blanks (2####), ambient field blanks (3####), and equipment rinsate blanks (4####) present a unique situation as they are not associated with a sampling depth, nor are they necessarily the same matrix for which they are being collected. Instead of depth, the last three characters of the fourth component will be sequentially numbered, as in the examples below:

Under the sample designation method described above, the identifier will be unique (i.e., no two samples will have the same one), and informative (i.e., will show sampling round, method of collection, location, sample type, and depth interval).

If the data will be entered into an existing database, the sample numbering scheme will be consistent with the existing data. In any event, it will be unique to each sample. This designation scheme will facilitate data management and tracking during the evaluation and reduction of data.

B.2.2 Sample Positioning

Sample coordinates will be surveyed or measured with a graduated tape from a known reference, as appropriate.

B.2.3 Sampling Equipment Decontamination

Soil sampling equipment will be decontaminated between sampling points to prevent contamination of clean areas, to prevent cross-contamination between sampling areas, and to assist in maintaining the health and safety of field personnel and the general public.

Dedicated or disposable sampling equipment will be used where feasible to reduce the possibility of sample cross-contamination. The majority of the sampling equipment will be decontaminated in the field. Equipment that cannot be effectively decontaminated will be disposed of after each sampling event.

The following is a partial list of sampling equipment that will be decontaminated in the field:

- Stainless-steel trowels or sampling spoons
- Stainless-steel mixing bowls
- Stainless-steel hand augers
- Shovels
- Split-spoon samplers
- Decontamination will consist of the following steps:
 - Liquinox™ detergent wash
 - Tap water rinse
 - Distilled, carbon-free water rinse

Air dry, away from potential sources of contamination (e.g., splashes, airborne particulates)

B.2.4 Sample Handling

Sample containers will be labeled with the required information on the label. Each label will include the information in Section B.2.7 written in indelible ink. Labels will be affixed to the sample containers in a manner so as to prevent separation of the label from the container. The sample will be preserved as required. Sample chain-of-custody procedures outlined in Section B.2.7 will be observed. Samples will be packaged and prepared for shipping in a manner that will prevent damage.

B.2.5 Sample Preservation and Holding Times

Samples will be preserved as described in specific analytical procedures presented in EPA methods for analysis of solid wastes (EPA 1986a), or water and wastes (EPA 1986b).

B.2.6 Sample Containers

All sample containers will be precleaned following the requirements in EPA guidance documents (EPA 1989).

Container requirements vary according to analyte, sample matrix, and hazard classification. It is anticipated that all samples collected for the project will be low hazard.

B.2.7 Sample Custody

Custody procedures will be performed to provide a documented, legally defensible record that can be used to follow the possession and handling of a sample from collection through analysis. A sample is in custody if it meets at least one of the following conditions:

- Is in someone's physical possession or view
- Is secured to prevent tampering
- Is secured in an area restricted to authorized personnel

Sample control and chain-of-custody procedures in the field and during shipment will be performed in accordance with the procedures in the U.S. Environmental Protection Agency's Contract Laboratory Program (CLP) Sampler's Guide (EPA 1990).

Except as noted below, sample containers will be labeled at the time of sampling with the following information:

- Sample number
- Sampling date
- Time
- Analyses required
- Preservation, if any

- Person sampling

When sample spillage during collection may obscure the sample labels, the label will be affixed immediately after sample collection but prior to collection of another sample. A chain-of-custody record will be completed for each container of samples (cooler) at the end of each day of sampling. Custody seals will be placed on each cooler or package containing samples so that the package cannot be opened without breaking the custody seals. The completed chain-of-custody forms will be delivered to the recipient laboratory with the respective samples.

The sample custodian at each laboratory will verify that the package custody seals are unbroken. The accompanying chain-of-custody records will be properly signed upon receipt of the samples by the sample custodian. Any questions or observations concerning sample integrity will be noted.

B.2.8 Shipping Requirements

Shipping and handling of samples will be done in a manner that protects both the sample integrity and shipment handlers from the possible hazardous nature of samples. All samples will be hand delivered by a WESTON representative to Analytical Resources, Inc., of Seattle, WA, or other laboratory services, as appropriate. Packaging, marking, labeling, and shipping of samples will comply with all applicable regulations promulgated by the U.S. Department of Transportation (DOT) in the Code of Federal Regulations (49 CFR 171-177).

B.2.9 Laboratory Coordination

Sample shipments, data packages, data validation, and document control will be performed as part of sample management. All scheduling for sample containers, analytical work, and data dispersal will be arranged in close conjunction with the laboratory. The following items will be completed:

- Review the number of samples to be submitted for analysis.
- Review the analytical requirements, number and type of containers needed, blanks requirements, and volumes required.
- Coordinate special analytical requirements with the laboratory QA manager.
- Inform the laboratory of the approximate dates of sampling.
- Schedule shipment of sample containers, labels, chain-of-custody forms.
- Inform the laboratory of the need for analytical results in both hardcopy and electronic formats.
- Scheduling oversight will be conducted by the project chemist.

B.2.10 Documentation

- All field activities will be documented in standard field forms. The following information will be recorded.

- Date and time of entry (24-hour clock)
- Task/activity identification
- Location
- Field measurements
- Weather conditions
- Deviations from the FSP
- Field observations
- Signature of person making entries
- Methods of sample collection and preservation

Additional minimum documentation required for a given investigation (e.g., boring logs, field data sheets) will be completed as required

B.2.11 Quality Assurance/Quality Control Samples

Field QA/QC samples will not be collected though laboratory QC samples including method blanks, laboratory duplicate analysis, and matrix spike sample analysis will be analyzed.

B.2.12 Waste Management

All contaminated or potentially contaminated materials generated will be managed by Boeing.

B.2.13 Confirmatory Sampling

Confirmatory soil sampling will be performed after the removal action to verify remaining concentrations. Samples from the bottom and sides of the excavation will be submitted to the laboratory for analysis of parameters which exceeded criteria in the initial sampling round.

At SWMU 77, soil samples will also be collected in the area of the former tank and piping to characterize the soil remaining after the tank/piping was removed. Four soil samples will be collected to characterize the condition of the soil. One discrete sample will be collected from the former bottom of the excavation, two discrete samples from opposite former sidewalls and one discrete sample from the middle of the former pipe run.

The number of samples to be collected is shown below.

Confirmatory Samples

SWMU	Analytes	Number of Bottom Samples	Number of Sidewall Samples	Comments
SWMU 2-87.65	TPH PCB	2	3	Two bottom samples in the triangular excavation (one sample near location 8713 and one under SWMU 2-87.65). One sample from each sidewall
SWMU 77 Containment Pad	PCB	2	4	Two bottom samples spaced equidistant down the center. One sample from each sidewall
Former tank/piping	PCB	2	2	One bottom sample from former tank excavation, two samples from opposite former excavation sidewalls, one bottom sample from the middle of the former pipe run
SWMU 78.B	TPH PCB	1	4	One bottom sample in the center. One sample from each sidewall
OA 16	Cadmium Chromium Copper Mercury bis(2-Ethylhexyl)phthalate	1	4	One bottom sample in the center. One sample from each sidewall

Discrete sidewall and bottom samples will be collected. Sidewall samples will be collected from the middle of the sidewall at an elevation one-half the distance from the excavation bottom to ground surface. Bottom samples will be collected equidistant along the bottom centerline.

B.2.14 Stockpile Sampling

The soil stockpiles will be sampled to determine the appropriate disposal methods. Three discrete samples will be collected from stockpiles 0 to 100 cubic yards in size. Five discrete samples will be collected from stockpiles 101 to 500 cubic yards.

Samples will be taken where there is visual indication of contamination. If no indication of contamination is present, samples will be evenly spaced over the stockpile.

B.2.15 Laboratory Analytical Methods

Chemical Analysis

Chemical analysis will be performed by Analytical Resources, Incorporated (ARI). ARI is located at 333 Ninth Avenue North, Seattle, Washington 98109-5187. The laboratory project manager/contact for the interim action is Jeff Reiten (phone: 206-621-6490).

ARI is a full-service chemical analytical laboratory participating in the State of Washington Department of Ecology Environmental Laboratory Accreditation Program. ARI and its staff have special expertise in the analysis of various complex matrices for organic and inorganic parameters. Staff have participated in the development and review of organic methods found in the Puget Sound Estuary Protocol (PSEP) guidance. Project experience is demonstrated by participation in the EPA CLP, Puget Sound Remedial Investigations and Feasibility Studies supporting the Comprehensive Environmental Response, Compensation, and Liabilities Act of 1980 (CERCLA[Superfund]) activities, and Puget Sound Dredged Disposal Analysis (PSDDA) monitoring projects.

Soil samples collected from SWMU 2-41.33 will be analyzed in accordance to *Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods* (SW-846) (EPA 1986a) and *Methods for Chemical Analysis of Water and Wastes* (EPA 1986b). The list of analytes for each analytical method and the expected detection limits are presented below.

**Analytical Methods, Parameters,
and Quantitation Limits for Soil Samples**

Parameters	Analytical Methods Soil	Quantitation Limits—Soil (mg/kg, wet weight)
Inorganics		
Cadmium	EPA 6010	0.6
Chromium	EPA 6010	1.5
Copper	EPA 6010	0.6
Lead	EPA 6010	6.0
Mercury	EPA 7471A	0.05
Organics		
bis(2-Ethylhexyl)phthalate	EPA 8270C	0.020
PCBs	EPA 8082	0.010
TPH (oil and diesel)	NWTPH-Dx	100

B.3 LABORATORY DELIVERABLES AND DATA VALIDATION

A laboratory data package will be submitted to WESTON for each analytical batch. Data deliverables will include:

- Copy of chain-of-custody forms for all samples included in the analytical batch.
- Tabulated sample analytical results with units, data qualifiers, percent solids, sample weight or volume, dilution factor, laboratory batch and sample number, WESTON sample number, and dates sampled, received, extracted, and analyzed all clearly specified. Surrogate percent recoveries will be included for organic analyses.
- Blank summary results indicating samples associated with each blank.
- Matrix spike/matrix spike duplicates result summaries with calculated percent recovery and relative percent differences.
- Laboratory control sample results, when performed, with calculated percent recovery.

In order to ensure that data are of a known and acceptable quality, 100 percent of all analytical data generated for the interim action will undergo a Level I quality review. Raw data (instrument tuning, calibrations, chromatograms, spectra, bench sheets, etc.) will remain on file at the laboratory and will not be routinely examined.

Level I QC Review

Level I data review is a review of data precision and accuracy using quality control summary sheet results provided by the laboratory for each data package. Level I review is based on the same quality control criteria as the more extensive Level II review, except raw data (instrument tuning, calibrations, chromatograms, spectra, instrument printouts, bench sheets and laboratory worksheets) are not reviewed. If outliers occur during calibration or calibration verification, the laboratory will note the incident in the data narrative and professional judgment will be used to determine any necessary actions if any. The following is an outline of a Level I review:

- Verify sample numbers and analyses match the chain-of-custody request.
- Verify sample preservation and holding times.
- Verify that field and laboratory blanks were performed at the proper frequency and that no analytes were present in the blanks.
- Verify field and laboratory duplicates, matrix spikes, and laboratory control samples were run at the proper frequency and that control limits were met.
- Verify surrogate compound analyses have been performed and that results met the QC criteria.
- Verify required limits of detection limits have been achieved.

B.4 REFERENCES

EPA (U.S. Environmental Protection Agency). 1990. Contract Laboratory Program Sampler's Guide

EPA. 1989. Specifications and Guidance for the Preparation of Contaminant-Free Sample Containers. Office of Emergency and Remedial Response. 9240.0-05. July.

EPA. 1986a. Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods (SW-846).

EPA. 1986b. Methods for Chemical Analysis of Water and Wastes. EPA-600/4-79-020.